

Higgins DM, Velkar A.

[“Spinning a Yarn”: Institutions, Law, and Standards c.1880–1914.](#)

*Enterprise & Society* 2017,

<https://doi.org/10.1017/eso.2016.73>

**Copyright:**

This article has been published in a revised form in *Enterprise & Society* [<https://doi.org/10.1017/eso.2016.73>]. This version is free to view and download for private research and study only. Not for re-distribution, re-sale or use in derivative works. © *copyright holder*.

**Date deposited:**

21/03/2017

# **‘Spinning a yarn’: Institutions, Law, and Standards in the Lancashire cotton textile industry c1880-1914.**

**David M. Higgins**

Newcastle University Business School,  
Newcastle University,  
Newcastle, NE1 4SE  
Email: [david.higgins@ncl.ac.uk](mailto:david.higgins@ncl.ac.uk)

**Aashish Velkar\***

School of Arts, Languages and Cultures  
University of Manchester  
Manchester M13 9PL  
Email: [aashish.velkar@manchester.ac.uk](mailto:aashish.velkar@manchester.ac.uk)

\* Corresponding author

© 2016, The Authors.

## **Abstract**

The Manchester Chamber of Commerce established a Testing House in 1895 and introduced uniform yarn contracting rules in 1897. The Chamber made these institutional ‘innovations’ to deal with the nefarious practice of ‘short-reeling’. Our case study explains how and why merchants were crucial to overcoming weaknesses in domestic – and to some extent - foreign legislation, to overcome this fraudulent activity. We argue that the Testing House and uniform contract were tantamount to developing a quasi-legal system such that private standards established through cooperative agreements had legal sanction. Our study shows how institutions evolved to improve governance along the supply chain for this highly specialised export-orientated industry. We contribute to the growing literature on historical markets, institutions and standards: based on extensive archival sources, we show how specific and complementary commercial institutions developed within grounded notions of governance rather than abstracted spaces of market exchange.

## **‘Spinning a yarn’: Institutions, Law, and Standards c1880-1914.**

During the nineteenth and early twentieth centuries, the global production and trade in cotton-textiles was dominated by Lancashire. It was ‘the leading industry of its day’.<sup>1</sup> The data supporting this claim are convincing: by 1913 the UK owned approximately 40.0 and 30.0 per cent, respectively, of the world’s spindles and power looms.<sup>2</sup> Between 1910 and 1913, the UK accounted for 70 per cent of world trade in cotton textiles. To place the latter figure into context, the UK’s share of world trade in these products exceeded those of Europe, the US, and India, by a factor of 3.5, 16.6, and 74, respectively.<sup>3</sup>

High levels of vertical and horizontal specialisation were a defining characteristic of the industry. Before the mid-nineteenth century, vertically-integrated spinning and weaving firms predominated.<sup>4</sup> But, by 1911, 77 per cent of spinning capacity and 65 per cent of weaving capacity was controlled by specialist spinning and specialist weaving firms, respectively.<sup>5</sup> Within each of the principal stages of cotton-textile production there existed a plethora of firms. In total, approximately 2,000 firms were engaged in spinning and weaving in the years immediately preceding the first world war. Competition within the industry as a whole was vividly described by Barnard and Hugh Ellinger as being, ‘without cohesion, without nucleus, loose, higgledy-piggledy, rushing hither and thither, jostling, chasing, fighting’.<sup>6</sup> The separation of spinning and weaving was complemented by geographic concentration. In broad terms, spinning and weaving were highly concentrated in the South and South West, and North and North East of Lancashire, respectively.<sup>7</sup>

Unsurprisingly, perhaps, much of the historiography on the Lancashire cotton-textile industry has focused on the relationship between structure and performance.

Particular attention has been devoted to whether the industry's structure impeded technological choice and productivity. This has also been the subject of Anglo-American comparisons, particularly the role of labour relations on productivity and employment practices and the extent to which differences in firm structure (specialised or vertically integrated) affected financial performance.<sup>8</sup>

In contrast, the role of merchants has been comparatively neglected; no clear consensus has emerged about the impact of these agents on the Lancashire cotton-textile industry. Steven Broadberry and Andrew Marrison, for example, have argued that merchants, 'played a key part' in the creation of external economies which underpinned the industry.<sup>9</sup> Their econometric analysis quantified the views of contemporaries, such as Elijah Helm, for whom, 'there [was] no mercantile organisation in the world which [was] so capable of widespread, efficient, and economical distribution'.<sup>10</sup> Other commentators have been less favourable in their assessment of merchants. One report stated that merchants had, 'made mass production of any particular line almost impossible', and that, 'the interests of the merchants are often different from those of the manufacturers, for it may pay the former to push foreign goods at the expense of the latter'.<sup>11</sup>

The purpose of this article is to re-assess the contribution of merchants to the international dominance of the Lancashire industry. Unlike the previous studies detailed above, our examination focuses on two institutional developments – the establishment of a Testing House (1895) and the introduction of a uniform contract (1897) – in which textile merchants belonging to the Manchester Chamber of Commerce (MCC), played a pivotal role. We argue that such institutional innovations are examples of ways in which the merchants sought solutions to endemic contractual problems that confronted the industry in the late nineteenth century. Our focus is on the nefarious practice of 'short-

reeling' of cotton yarn whereby yarn counts were deliberately and systematically misrepresented.<sup>12</sup> This practice undermined the genuine yarn trade and, consequently, the cloth trade, which the Lancashire merchants dominated internationally. To improve governance they introduced the two institutional solutions, which were tantamount to developing a quasi-legal system: private standards established through cooperative agreements, which were legally enforceable. Such institutions are unusual for manufactures, being more characteristic of organized commodity markets.<sup>13</sup>

The role of merchants in the standardization of quality and setting rules of contractual exchange has been recognized in the broader historical literature. Simon Ville has argued that merchants, through associations, provide strong structural and cultural properties to markets, thereby strengthening them.<sup>14</sup> Stephen Pirrong showed how merchants, via commodity exchanges, governed contractual relations through commodity measurements, standardization and contract enforcement.<sup>15</sup> Similarly Kenneth Lipartito demonstrated how an efficient market for cotton depended upon rules enforced through the New York Cotton Exchange that involved, *inter alia*, stamping out the circulation of false and unreliable information to reduce information asymmetry.<sup>16</sup> Other disciplines have similarly situated the role of merchants in regulating international trade in commodities, standardizing product quality, developing and enforcing contracts, and generally improving governance where exchange occurs between 'actors in a value chain having only partial knowledge of the product and its related production methods'.<sup>17</sup> In other words, the agency for developing contract rules often lies with the intermediaries rather than the producers or end-buyers in a commodity chain: in our case, Manchester merchants developed the rules for the sale of yarn.<sup>18</sup>

The relationship between contracts and exchange is fundamental to the operation of markets. According to Alessandro Stanziani, a mainspring for the evolution of capitalist economies was the tension between national institutions, global dynamics and local products.<sup>19</sup> For example: how to determine a market price that ensures accurate correspondence between price and quality? One response was to define the quality characteristics of a product. But this solution was not always successful because market participants might not share the same perspective on the price-quality nexus and, in any case, there may exist several definitions of ‘quality’.<sup>20</sup> The chambers of commerce (and other certifying bodies) resolved this conflict by developing benchmark standards. This, in turn, facilitated product standardization - the characteristics of the product do not vary through time. Other benefits that ensued from standards-certification included a reduction in the costs of negotiation and inspection and a reduction in uncertainty. Stanziani’s analysis focused on commodities, such as alcohol, cooking-oil, oats, rye and wheat and he concluded that detailed product-quality definitions were not necessary in other markets. Although the establishment of certifying bodies was more characteristic of market trade in primary products, the evidence presented in this article shows that quality-certification was practised in cotton textiles.

In the same vein, this article complements and extends historical analysis of governance in the supply-chain. A substantial literature has documented the quality-control issues that can arise when producers are ‘separated’ from distributors and merchants. Alcoholic beverages have featured prominently in these analyses. In the wine trade, James Simpson has demonstrated that merchants helped undermine the reputation of famous Chateau, such as *Lafite* and *Marguax*, by selling ‘inferior’ wines from earlier vintages; they also opposed implementation of *Appellation d’Origine* regulations which restricted their ability to blend wine from different regions and to market the composite

product as 'Bordeaux'. Wine growers unsuccessfully attempted to wrestle back control from merchants and by the early twentieth century, most commodity chains in the French wine trade failed to provide 'accurate information that would enable consumers to discriminate between differences in quality'.<sup>21</sup> Similarly, Paul Duguid, has examined the advertising campaigns of merchants representing growers in the Douro and Porto regions which had the effect of ceding more authority to earlier points in the supply chain – and subordinating merchants' names.<sup>22</sup>

In contrast to the above studies, merchants in the Lancashire textile industry remained of paramount importance during the industry's rapid growth before 1914. Few manufacturers marketed their products under their own brands. One estimate indicates that by the early 1920s, there existed no more than eight publicly quoted companies and eighteen private companies which had developed their own marketing activities.<sup>23</sup> Many of these, for example, Sir Elkanah Armitage, Barlow & Jones, Ashton Brothers, Horrockses Crewdson & Co., and Tootal Broadhurst & Lee, were established in the nineteenth and early twentieth centuries. Nonetheless, even for these companies, and other famous integrated concerns such as John Rylands & Sons, 'the Latin American market for textiles was still controlled by merchants'.<sup>24</sup> Consequently, merchants' trademarks and brands prevailed in the sale of cotton-textiles. Indeed, some of the biggest merchants in this industry owned substantial numbers of trademarks: Ralli Brothers, owned 3,000 marks; William Graham & Co., and G & R Dewhurst owned over 1,000 marks each. Many other merchants owned in excess of 500 marks.<sup>25</sup> The dominance of merchants' brands meant they could not be insensible to the quality of yarn and cloth supplied in the 'upstream' stages of production: failure to supply products which met expected quality would have damaged their own reputation, not those of the manufacturers. For Stanley Chapman, 'Competition among spinners and weavers guaranteed cheapness, while the



merchants' insistence on perfection and exact adaption to particular consumers' wants was a guarantee of quality'.<sup>26</sup> We argue that merchants, operating through the MCC, effected standardisation of products via the introduction of a uniform contract, which defined appropriate trade descriptions. This initiative was supported by the establishment of a Testing House, the decisions of which were accepted as a means to settle trade disputes without recourse to the courts. We recognise that the growth of specialist merchants facilitated vertical specialisation within the industry. But, in contradistinction to previous analyses of these agents, we argue that their role in developing better governance within the supply chain has not received the attention it warrants.

We contend that deconstructing how institutions counteract the pernicious effects of competition is crucial to improving our understanding of the governance of market-based exchanges. Institutions do matter but, so too, do the *complementarities* between different institutions – public and private.<sup>27</sup> We show how civic actors (merchants) established private institutions when state regulation proved inadequate for market governance. Our research also contributes to the understanding of different forms of market governance, especially those that operate at the boundary of state and civil society.<sup>28</sup> Under certain conditions, such as those we study, competition without cooperation may prove inadequate to foster stronger governance. Nevertheless, cooperation could be unequal and does not imply consensus, just as standardisation is often fraught with politics, negotiation and compromise.<sup>29</sup> The lesson from this case study should be that competitive- or market-based exchange does not *by itself* imply robust governance. Market exchanges are based on rules, but how these rules emerge is still largely unclear.<sup>30</sup>

This article is based on a detailed examination of archival sources of key industry associations, including the MCC, the Master Cotton Spinners Associations and various parliamentary reports and other official publications. It is organised as follows. Section two briefly explains the importance of merchants in the Lancashire cotton- textile industry and the functioning of the MCC, which was the principle institution through which merchants aired their grievances. It further outlines the problems generated by ‘false measurements’ that the merchants experienced. Section three examines the legislative landscape and why Manchester merchants considered it inadequate to resolve the issues of product quality. Section four details the historical context in which uniform contracting and the centralized testing for quality emerged through merchant intervention. Section five examines the legacy of this intervention and section six concludes.

## **MERCHANTS IN THE LANCASHIRE COTTON-TEXTILE INDUSTRY**

It is well established that the Lancashire cotton textile industry benefitted from rapidly expanding export markets for most of the nineteenth century and up to 1914.<sup>31</sup> Table 1 shows the broad patterns of export trade during this period, from which the following trends are apparent. First, yarn exports were substantial throughout our period. Second, yarn as a percentage of total cotton textile exports declined from the 1890s - continuing a trend that began in the 1870s.<sup>32</sup> There is no doubt that India was, by far, Lancashire’s biggest export market in the late-nineteenth century, accounting, on average, for almost 40 per cent of cloth exports (by volume) between 1880 and 1913. The comparable figures for Latin America and the Far East (China and Hong Kong) were eight, and ten per cent, respectively. In contrast, Lancashire exported more yarn to continental Europe compared to India.

**[INSERT TABLE 1 HERE]**

The production and marketing of yarn and cloth were coordinated by a multitude of specialist merchants at each stage of production. In the early stages of the industry's development, spinners and manufacturers employed their own agents to sell their products. Wright Armitage, a Manchester-based manufacturer, used family members to sell its cloth in the US; McConnell & Kennedy, one of the most famous Manchester spinners, corresponded with business partners in Egypt, India and Poland. Some merchants, such as Gregs, successfully became millowners by the late-eighteenth century.<sup>33</sup> However, from the early-mid nineteenth century yarn spinners and manufacturers began to rely on specialist merchants for distribution, merchanting and retailing.<sup>34</sup> Estimates indicate that there were approximately 1,000 merchants in the industry between 1911 and 1931.<sup>35</sup> This number conceals considerable specialisation amongst this group. Yarn agents acted as intermediaries between spinners and manufacturers; it appears that they purchased approximately 50 per cent of the yarn sold on the Manchester Royal Exchange.<sup>36</sup> Merchants were responsible for converting cloth into the final product to suit the requirements of their particular customers. Converting involved bleaching, dyeing and printing and the processing of cloth into specific garments (handkerchiefs, household-linen, shirts, under-clothing). Most merchants were engaged in the export trade, but a few, such as J & N. Phillips, I & J Cooper and S & J Watts, specialised in the home trade.<sup>37</sup> In addition, merchants also played a crucial role in disseminating market information: 'The industry looks to [merchants] to maintain contact with markets...to push the sales of its products in these markets and to bring back knowledge of what the consumer needs'.<sup>38</sup>

Foreign merchants featured prominently in the Lancashire textile trade. One of the most famous (and biggest) firms – Ralli Brothers – was established in Manchester by 1828; by 1865, through a series of interlocking partnerships, they were operating in 15

centres across Europe, India, and the Middle East.<sup>39</sup> Subsequently, Rallis' were joined by other Greek houses: Rodocanachi, Sons & Co., Rocca Brothers, Cassavetti Brothers & Co. It was stated of the Cababé Brothers, who began in Manchester in 1840, that they had almost a monopoly in the trade with Syria. The number of Greek merchants based in Manchester grew rapidly and by 1870 they exceeded the number of German houses. According to Stanley Chapman, the principal reasons for the success of Greek merchants was, 'that they succeeded in finding new markets for cotton piece goods in a part of the world where British representation was weak'.<sup>40</sup> In addition, Greek merchants acted as a conduit for other merchants operating in particular ports, such as Beirut and they developed reciprocal trading relationships between Britain and the Middle East. By the mid-nineteenth century, Ralli Brothers were establishing a 'massive mercantile operation' in India, and they, together with another leading Greek merchant house – Spartali & Lascardi, were probably the biggest merchants operating in the UK – surpassed only by the Rothschilds.<sup>41</sup> However, for other export markets, such as Latin America, it appears that British merchants, such as Hugo Dallas, were prominent.<sup>42</sup> There were about 150 middle-eastern merchant houses based in Manchester by the end of the nineteenth-century, further consolidating Lancashire's links with this region.<sup>43</sup>

The MCC was the principal institution which represented cotton-textile merchants. It began as a Commercial Society, founded in 1794, and its stated objectives included efforts 'to resist and prevent...the depredations committed on mercantile property in foreign parts, detect swindlers, expose chicanes and persons void of principle and honour in their dealings'.<sup>44</sup> In 1820, the Commercial Society was reconstituted as the MCC. Merchants engaged in the Lancashire cotton textile trade were the single most important group belonging to the MCC. Members engaged in the Lancashire cotton industry (in any capacity) accounted for 73 per cent and 61 per cent of total membership in 1860 and 1900,

respectively. Within this textile cohort, members who were merchants only, comprised 45 and 48 per cent respectively of the 'textile' membership, and 33 and 29 per cent, respectively, of the Chamber's total membership in these years.<sup>45</sup> Given the importance of textile interests within the MCC, and especially the prominence of merchants, it is unsurprising that, in common with other Chambers, the MCC lobbied actively on behalf of its members when common interests were threatened. For example, Sven Beckert has demonstrated that this chamber was involved in efforts to reduce tariffs; it opposed the emigration of artisans and it played a key role in the agitation to secure Indian cotton during the American Civil War.<sup>46</sup> Beckert emphasises that merchants were acutely aware of the need for a sound legal infrastructure – backed by the state – to safeguard their activities:

Trade ultimately depended on a legal infrastructure devised and enforced by states. Unsurprisingly, merchants spent much of their political energy on trying to strengthen this legal order and make it conform to their interests...Conventions, although agreed upon by merchants themselves, needed enforceable rules, and merchants understood that no single actor was as efficient in enforcing those rules as the state.<sup>47</sup>

We argue that this statement is only partly correct. The British government enacted the Merchandise Marks Acts in an attempt to eradicate, or at least minimise, fraudulent activity across various industrial sectors. But, as we demonstrate below, the MCC perceived weaknesses in this legislation; the Chamber was particularly aggrieved that these Acts only applied to *falsely* marked yarn: they did not specify that yarn had to be spun to a uniform length when sold in the open market. This subtle distinction created a

serious lacuna for ‘genuine trading.’ As far as the merchants were concerned, the legal infrastructure only partially addressed their concerns. A fundamental impasse existed between trade understanding of yarn and cloth measurements and those specified in the Merchandise Marks Acts. For the same reason, also discussed later, attempts by the MCC to ensure alignment between Indian and British legislation was only partially successful. We explain this issue in more detail in the context of the trade problems generated by false lengths.

Cotton yarn was sold by weight, but the ‘count’ denoted its fineness or quality. A count indicated the number of hanks - each of 840 yards - of yarn needed to make a weight of one pound. Thus, a count of 100s meant that 100 hanks (totalling 84,000 yards) made up one pound. Higher counts indicated lighter, finer and more expensive yarn, whereas lower counts were heavier, coarser and cheaper.<sup>48</sup> ‘Short-reeling’ exploited this relationship. For example, a contract for 100s might be specified but the yarn delivered was in hanks of only 820 yards (totalling 82,000 yards). To make good the deficiency in weight, coarser (heavier) yarn was actually supplied. In other words, the weight of yarn delivered was correct, but not its composition. Other instances of misrepresenting the true count included increasing the thickness of cardboard backing when transporting the yarn to make up the weight deficiency. Manchester firms were clearly identified as the principal culprits: ‘goods which were marked 100 yards did not measure 50; those marked 150 yards only measured 70 or 80’.<sup>49</sup> Short-reeling was not unique to the Lancashire industry, but its prevalence was greater and more persistent compared to other UK textile regions. In Yorkshire, the formation of an ‘association for suppressing the practice of false marking or labelling of goods for sale’ by the Huddersfield Chamber of Commerce effectively led to the disappearance of the practice of short-reeling from the woollen industry.<sup>50</sup> The Leeds Chamber of Commerce also supported the eradication of stamping

false lengths.<sup>51</sup> Nevertheless, short reeling was potentially far more damaging to the Lancashire cotton textile industry because of the sheer volume of its exports. Over the period 1890-1913, exports of cotton cloth and yarn exceeded those composed of wool, by a factor of 32 and 4,300, respectively; over the same period, exports of cotton yarn exceeded those of thread by a factor of 8.5.<sup>52</sup>

Contemporaries claimed that the industry's structure provided an incentive to 'short-reeling'; that specialised spinners deliberately short-reeled the yarn knowingly purchased by merchants.<sup>53</sup> The financial rewards generated from slight discrepancies between reported and actual counts were enormous. James Lees, managing director of Crompton & Co., and Wood End Mills, reported that his mills produced 80,000 pounds weight of 12s every week, and to mark these as 14s would yield £2,000 per annum profit if the price difference between these counts was just half a farthing.<sup>54</sup> Merchants were not without blame either. Some instructed bleaching companies 'to make-up and mark the lengths of white piece goods in ways which are at least of doubtful legality'.<sup>55</sup>

The insidious effects of short-reeling within Manchester were exacerbated by similar practices abroad. The MCC complained about Austro-Hungarian firms selling short-reeled yarn in Continental Europe. The Chamber vociferously objected to Austrian short-reeled yarn exported to Romania, Bulgaria, Serbia, Turkey, and urged the Foreign Office to encourage these countries to introduce appropriate legislation.<sup>56</sup> Complaints regarding short reeling in international markets emerged in the 1880s and reached a crescendo in the following decade.<sup>57</sup> Merchants complained that short-reeling by foreign spinners, 'acted to the detriment of full reeled English spun yarn'; that such practices, 'defraud the buyer and consumer, to the great disadvantage of all honest traders'. By 1892,

the Chamber was demanding ‘an international agreement [and] legislation to [end] fraudulent trading induced by improper competition’.<sup>58</sup>

Contemporaneous with short-reeling was the practice of falsely stamping piece goods. A dedicated committee, comprising representatives of prominent merchants and manufacturers such as G & R Dewhurst, Ralli Brothers, and Tootal Broadhurst & Lee, was established in 1886 to investigate, ‘the frequent complaints arising, principally in India, of the false marking of piece goods [exported] to that country from Lancashire’. To ensure a higher standard of commercial morality within Manchester, the committee recommended that: all cotton piece goods exported to India had to be plainly marked with the length of each piece in imperial yards; the average length of the pieces of any lot had to conform with the indicated length; each piece could deviate from the indicated length by only a small discrepancy equivalent to 0.7 per cent.<sup>59</sup> The MCC also instructed customs officials in Calcutta and the Bengal Chamber of Commerce about the ‘proper methods to be observed in determining the widths of cotton piece goods, when such widths are stamped upon the ‘face-plait’ of the goods.’<sup>60</sup> The Chamber took a dim view of traders who employed ‘false folding’ methods for cloth sold in Egypt and Nigeria, making the cloth appear longer than it actually was.<sup>61</sup>

By the late-nineteenth century, Lancashire merchants became increasingly concerned about the marketability of their textiles in foreign markets. Issues surrounding product quality featured prominently. ‘Quality’ in this context was distinct from ‘bad spinning.’<sup>62</sup> For the merchants, maintaining quality meant standardisation and measurement uniformity of yarn and piece-goods in terms of counts or lengths. By controlling quality in this manner, merchants sought to strengthen governance within the



textile industry. Their actions must be situated within the scope and limitations of existing state regulation at the time.

## **MERCHANDISE MARKS LEGISLATION IN THE UK AND ABROAD**

Short-reeling was viewed as part of a more general problem of accurate ‘labelling and marking’ of merchandise, rather than a weights and measures issue of ‘false measurement’. The Merchandise Marks Act 1862 introduced legislation criminalising false indications of quantity.<sup>63</sup> However, in the Lancashire industry, no prosecutions involving short reeling were effected before 1888 because there was no universal custom for marking yarn or cloth: marks might refer to either quantity or quality as noted above. In addition, the Act required proof of intent to defraud – a difficult task if spinners indicated that the yarn supplied did not contain hanks of 840 yards.<sup>64</sup> The effect of moisture on yarn was recognised as problematic. It was estimated that the amount of moisture contained in yarn in the spinning room varied from 3.5 to 7.5 per cent. Stocks of yarn containing a high level of moisture would be affected by mildew, especially if they were exported to warmer climates. If very damp yarn was reeled in the full glare of the sun and then weighed, a totally erroneous indication of count was generated. Moreover, inherent variation in length during spinning meant that the reported ‘count’ was not exact and this variation depended on the counts spun. For bleached yarns, the variation could be 8.5 per cent.<sup>65</sup> Given these difficulties, the problem of marking short-lengths persisted.<sup>66</sup>

To a large extent, the Merchandise Marks Act of 1887 remedied many of the weaknesses in the 1862 Act. The 1887 Act stipulated that persons who applied a false trade description to products, ‘unless he proves that he acted without intent to defraud’,

was guilty of an offence and could be imprisoned for up to two years (with hard labour) or fined £20.<sup>67</sup> A Select Committee appointed to review the workings of the former Act reported on its benefits.<sup>68</sup> However, as far as the Lancashire cotton-textile industry was concerned, major deficiencies remained. The President of the MCC, George Lord, testified to collusion on short-lengths involving Lancashire spinners, Manchester merchants and Indian dealers. In Lord's opinion, collusion meant it was impossible to obtain sufficient evidence to instigate a successful prosecution under the 1887 Act.<sup>69</sup>

Dissatisfied with the 1887 Act, the MCC established its own investigation in 1888, which revealed that the practice of marking 'short-length' was particularly acute in 'bundle yarns'.<sup>70</sup> This inquiry revealed further problems in the application of the Merchandise Marks Act, 1887. Much depended on how the Courts interpreted this Act; without clarity it was impossible for the merchants to establish how this Act affected existing practices in Lancashire.<sup>71</sup> Because the Merchandise Marks Acts were criminal statutes there was no opportunity to 'test the water' by instigating a 'friendly' civil test case.<sup>72</sup> The MCC was concerned that although the standard practice in Lancashire was to reel hanks of 840 yards, the Merchandise Marks Act, 1887, 'does not limit spinners to this mode of reeling, but allows them full liberty to reel and tie up in any way which is not calculated to deceive'.<sup>73</sup> In the absence of deception, the 1887 Act prevented Manchester merchants from instigating legal action even when hanks contained less than 840 yards. Short-reeling was first introduced to deceive customers but had, 'become so general that the practice had ceased to be dishonest'.<sup>74</sup> Others claimed that the practice was especially damaging to the reputation of Manchester's cotton merchants because it represented a double fraud in terms of quantity and quality.<sup>75</sup>

Two high-profile cases on short reeling indicated the scale of fraud practiced by certain unscrupulous spinners and merchants after the 1887 Act. In 1888, M/s. Pemberton, a Lancashire-based spinner, charged Greenhalgh & Sons with falsely supplying 60s yarn in hanks of 570 yards, the total fraud in the transaction amounting to 81,000 yards. The plaintiffs referred to the Select Committee evidence (discussed above): if a spinner could make an extra £2000 per annum by selling 12s as 14s, just imagine the profits to be earned by selling yarn in hanks of 570, instead of 840 yards. The defendants were also accused of supplying the Manchester merchant Messrs G. and A. Ananiadi with the spurious yarn; the latter were able to sell this yarn at a price which was below the production costs of genuine 60s – thereby threatening to destroy the genuine trade in this yarn. M/s. Pemberton stated that, ‘They wanted a conviction, and they wanted to put an end to those dishonest practices. If the case was given the publicity which he anticipated it would have, because it was a case which was watched with the greatest interest by the mercantile societies in Manchester...and wherever cotton spinning was carried on, it would achieve that end’. The defendant was found guilty, fined £4, ordered to pay £120 in costs and required to furnish information, which would allow an action to be brought against Ananiadi.<sup>76</sup> Subsequently, in 1889, Ananiadi was convicted of causing bundles of yarn containing 45 hanks to the pound (weight) to be made-up as 60 hanks and marking these bundles with ‘60’ to indicate the count of yarn contained in the bundle. According to Lewis Boyd Sebastian, a prominent British authority on merchandise marks, these practices represented a double fraud: ‘the yarn was made to appear to be of a finer quality than it really was, and the hank, instead of containing its normal number of yards, viz., 840, contained only about 630 yards, and was, in fact, a spurious hank. Consequently, there was a misrepresentation both as to the length and the fineness of the yarn’.<sup>77</sup>

Despite such convictions, the MCC remained sceptical of the Merchandise Marks Act. Convictions were secured in the above cases precisely because the yarn was *falsely described*. The MCC was adamant that selling hanks of yarn which were less than 840 yards was wrong *per se*, not just when they were falsely described: merchants were not satisfied merely by punishing false descriptions. They sought to standardise the hank of 840 yards throughout the industry and to punish anyone who provided hanks less than from this standard, even if they were accurately and legally described. In 1891, the MCC appointed a special committee to investigate whether current modes of reeling and the making-up single of yarns conflicted with the Merchandise Marks Act, 1887. This committee examined a sample of ‘short-reeled’ yarn and found it to be ‘calculated to materially deceive the spinning trade of this country’. But more evidence was required for a criminal prosecution. Letters from merchants stated, ‘that it was well known and capable of proof that large quantities of yarn are being reeled in short lengths of 600 to 700 yards per hank for shipment to the continent to the injury of legitimate trade.’<sup>78</sup> The law still remained unclear about the standard for establishing short-reeling, and it required an expensive legal process and sympathetic courts to establish that deliberate fraud had occurred when hanks did not contain 840 yards. In 1892, in an attempt to prevent intentional departures from 840 yards, the MCC issued a statement: a hank of 840 yards of single cotton yarn was a recognised trade description; deviations from 840 yards were in breach of the Merchandise Marks Act, 1887.<sup>79</sup>

However, the views of the MCC conflicted with the Merchandise Marks Act, 1887, and, as we show later, it became imperative that the Chamber sought an industry-wide agreement that a hank was, in fact, 840 yards. Section 18 of the Merchandise Marks Act, 1887, stated: ‘Where, at the passing of this Act, a trade description is lawfully and generally applied to goods...the provisions of this Act with respect to false trade

descriptions shall not apply'. In other words, it was lawful to supply hanks of less than 840 yards provided this was indicated. But the dilemma posed by this practice was that it prevented a consensus being reached on what constituted a 'standard hank' and it had the potential to undermine the competitiveness of firms, which *only* supplied hanks of 840 yards.

In any case, as a purely domestic statute, the Merchandise Marks Act, 1887, was incapable of preventing short-reeling in Austro-Hungary or, indeed, anywhere outside Britain. This created a tenuous position as far as Manchester merchants were concerned. No gain could be achieved if misrepresentation was eradicated in Lancashire, but permitted to continue abroad. The inequity of this situation was forcefully communicated by the MCC in a Memorandum to the Foreign Office, in which they indicated:

The Merchandise Marks Act, 1887, has not been followed by similar legislation in competing cotton-spinning countries abroad. [There is] loss of business in English yarns through the preference given to Austrian spinnings, in consequence of these being 'short-reeled'...the disability thus imposed upon English spinners and merchants should be represented ... with a view to inducing the Roumanian Government to prohibit the importation into their country of yarns reeled at less standard length than 840 yards to the hank.<sup>80</sup>

This begs the question: how successful was the MCC in its petitioning of the British government to encourage Bulgaria, Roumania, Serbia and Turkey, to enact legislation preventing the import of yarns in hanks which were less than 840 yards? This question occupied the MCC throughout the early 1890s, but without a solution.<sup>81</sup> The Serbian

government published a notice in their Official Gazette, but admitted, 'it was unlikely [they] would take any further steps in the matter'<sup>82</sup>. Government officials in Roumania stated they did not, 'possess any means of preventing the importation into Roumania of cotton yarns...not coming up to the length required by English law', and, 'the state both of the intelligence and education of the Customs officials was too low to permit of the proper working of any law which might require the Customs to discriminate between true and falsely reeled yarn'.<sup>83</sup> Turkey does not appear to have introduced legislation comparable to the British Merchandise Marks Act, 1887, before 1913.<sup>84</sup> The petitioning of individual foreign governments to prohibit the import of 'short-reeled' yarns from Austria was the only course of action available to the MCC because there did not exist a global framework preventing unfair competition.<sup>85</sup>

The MCC was more successful in exerting pressure on the Indian government.<sup>86</sup> Manchester merchants were particularly concerned with misrepresentation of textile products exported to India because of the size of the Indian market and because the British Merchandise Marks Act of 1887 did not *initially* apply to India. Exacerbating matters, there was no legal standard of 'yard' in India.<sup>87</sup> The MCC emphasised the need for corresponding merchandise mark legislation to be introduced in India because, 'satisfactory and effectual means cannot be taken here to put an end to the present system of incorrect stamping', and petitioned the Indian government accordingly.<sup>88</sup> Manchester's campaign coincided with growing dissatisfaction about the ineffectiveness of domestic legislation among India's cotton industrialists. The chairmen of the chambers of commerce in Bengal, Bombay and Madras, and the Millowners Association in Bombay, expressed their support for an Indian version of the UK Merchandise Marks Act, 1887. Indian industrialists recognised that many of the practices they wanted criminalised were identical to those practised in Britain before 1887. The chamber of commerce in Karachi

stated that it was desirable that an Act be introduced, ‘making the false stamping of lengths and the false stamping of quantities punishable’, and a leading editorial stated, ‘the great bulk of mercantile opinion in India is in favour of early legislation, and this is certainly the view of the mercantile community in Great Britain who are interested in Indian trade.’<sup>89</sup> Without corresponding legislation in India, the MCC recognised that the operation of the British Merchandise Marks Act of 1887 would have the unintended consequence of encouraging continental European spinners to export textiles with false description of length to India – further undermining Lancashire’s competitiveness.<sup>90</sup>

In 1889, the Indian Merchandise Marks Act was passed.<sup>91</sup> Many of its provisions were similar to those of the British Act of 1887, for example, the definition of ‘trade description’ and ‘false trade description’. The Indian Act made additional provision for the identification and testing of trade descriptions featuring prominently in the textile trade.<sup>92</sup> At least in the early years of its operation, the Indian Act was especially effective in the detection of falsely marked textiles imported to India. Comparing 1890-91, with 1891-92, the total number of seizures by the Indian customs authorities was 1,133 and 894, of which 59 and 56 per cent, respectively, were under the provisions governing false stamping of lengths on textiles.<sup>93</sup> Manchester cotton merchants recognised that the Indian Merchandise Marks Act, 1889, had been beneficial: it had cured the deceptive marking of grey bundle yarn it had eradicated the ambiguous stamping of cloth by requiring every piece to be stamped with its actual length.<sup>94</sup>

The Indian Act also provided for ‘limits of variation as regards number, quantity, measure, gauge or weight.’<sup>95</sup> In 1890, the Indian government established a special committee to determine this latitude.<sup>96</sup> However, a clear consensus proved difficult to reach. The special committee recommended that the variation on grey yarns should be

five per cent either way. The Bombay Millowners Association recommended that the permissible variation on grey yarns should be 10, 7.5, and 5 per cent, on all yarns under 16s, 16s to 30s, and greater than 30s, respectively. Recognising that such variation could not be applied to all types of yarn, - for example bleached or unbleached -- the committee recommended that acceptable variation as regards *count and length* should be the same as grey yarns, but variation in *weight* would be permissible for dyed yarns.<sup>97</sup> Further consultation resulted in the *Calcutta Notification* which specified that the *only* acceptable trade description applied to dyed yarns was that denoting length in which the hank was 840 yards, from which only slight variation of 2.5% was permitted.<sup>98</sup> In other words, because dyeing and bleaching caused unavoidable 'shrinkage' in the 'grey' yarn, it was permissible to stamp the original (pre-processed) count on the treated yarn provided the length of a hank was no less than 819 yards. The MCC fully approved this policy.<sup>99</sup>

However, the treatment of dyed or bleached yarns proved problematic because of differences in trade practice between spinners in Manchester and Glasgow. For example Stamping '60s made up as 40s dyed' indicated a conflict between the length and weight of yarn which was unacceptable under the new Indian legislation. Because dyeing altered the count of the yarn originally supplied, which trade description should the authorities use when determining whether a trade description was false: the original yarn count prior to dyeing or the count after dyeing?<sup>100</sup> A fissure developed between Lancashire and Glasgow-based exporters, who held opposing views on trade practices, not only about short-reeling. According to Manchester merchants the most honest way of denominating all dyed yarns, was that they should conform throughout to the original grey counts: 'Manchester firms have stipulated for many years that ...the counts of coloured yarn...are the counts of the yarn in the grey state, and not what the yarn counts in its dyed condition.'<sup>101</sup> The Glasgow firms considered this to be an unworkable proposition,



claiming that their existing practice of sending ‘net weight’ yarns to India was in concord with the new legislation. They claimed that ‘if an attempt is made to demand a description at some former period of [an article’s] existence, which cannot be proved or disproved, the door is thereby opened for misrepresentation, deception and fraud.’<sup>102</sup>

To find a solution, Manchester merchants and the Scottish Turkey-Red Dyers Association met in Carlisle in 1898. The meeting did not arrive at a way of resolving the two opposing positions: stating the original grey counts or stamping the ‘new’ count of the dyed yarn. It resulted ultimately in the former instigating unsuccessful legal action against the latter.<sup>103</sup> Despite intervention by the Board of Trade, this matter was never satisfactorily resolved before 1914 and Manchester merchants continued to complain about the export of short-reeled yarn from Glasgow to India and Singapore.<sup>104</sup>

The preceding discussion has indicated that the legal infrastructure devised by national governments was only partly successful in addressing the concerns of the MCC: the standard hank of 840 yards remained elusive to monitor or enforce. Merchants were compelled to adopt a different strategy, that of convincing Lancashire spinning firms to adopt this standard and to agree on rules to enforce it. At stake was not just an issue of eliminating false description. A deeper, more fundamental issue was whether parties to a contract could reliably establish that a breach of contract had occurred if a hank contained less than 840 yards.

## **UNIFORM CONTRACTING AND TESTING FOR QUALITY**

By the early 1890s, merchants were keen to regulate the trading of yarn in Manchester by introducing uniform contracting rules; the MCC promulgated these in December 1896.<sup>105</sup> As may be expected, the contract addressed a range of issues affecting the terms of exchange, including: strikes, lockouts, and compensation when a delivery of yarn was

rejected because of concerns about its 'quality'.<sup>106</sup> For our purposes, the key provisions of the uniform contract were: 'The number of hanks in a bundle, taking 840 yards to the hank, must indicate the counts of the yarns' (Article 4); 'In case of dispute as to counts, length, weight or condition, the yarn shall be tested by and according to the rules of the Manchester Testing House, and its certificates shall be binding on both parties' (Article 5); and 'In case of dispute the decision whether a delivery may or may not be rejected, and what damages shall be paid for breach of contract, shall be left to the Tribunal of Arbitration' (Rule 14).<sup>107</sup>

Here, the interests of some of the spinning firms coincided with the merchants. The Federation of Master Cotton Spinners Association (FMCSA) in fact collaborated with the MCC to introduce the uniform contract rules in 1895.<sup>108</sup> Spinning firms had recognised the need to remedy the 'laxity of the present system of contracts for the sale and purchase of yarn.' This was especially the case with Oldham spinners, who depended more upon yarn exports than other regions such as Bolton.<sup>109</sup> The FMCSA had unsuccessfully tried to introduce a standard 'basis of contract' between 1893 and 1894. Oldham firms reckoned that successful standardisation of contracts required 'an agreement [between] not only spinners, but also manufacturers, merchants, and others interested in the subject.'<sup>110</sup> However, the cotton strike in the 1890s had forced this topic to the background.

Meanwhile, the MCC initiated its own campaign to develop such a contract which was, 'acceptable to buyers and sellers, [that it] should be framed and recommended for general use in the home and foreign yarn trade'.<sup>111</sup> Determining the wording and content of the contract required that the MCC collaborate with representatives of the major employers' associations to achieve consensus on the length of yarn in a hank, the

contingencies which might lead to breach of contract and the establishment of an impartial and authoritative means to resolve disputes.<sup>112</sup>

The introduction of the uniform contract was a necessary but not sufficient condition for regulating the Lancashire yarn trade: the establishment of a Testing House was the other key component because it provided impartial and authoritative tests of disputed yarn quality. In addition, as we discuss below, the Testing House became increasingly involved in the testing of cloth, a crucial feature as exports of this product grew rapidly after 1900.

Initially, there was considerable opposition to the Testing House. William Tattersall (FMCSA) claimed there was ‘no desire expressed for such a house’, and that there would be considerable difficulties in its operation.<sup>113</sup> Nonetheless, the MCC was adamant that an independent facility for verifying the accuracy of statements about length and weight of textiles was vital:

The Yarn Sectional Committee is of opinion that arbitration cannot be satisfactorily carried out without accurate and impartial authority for the testing of raw materials, yarns and textiles. [We] take the necessary steps for the establishment of a Testing Room<sup>114</sup>

The Testing House was established in 1895 in collaboration with Manchester City Council. Individual members of MCC agreed to contribute £25 to cover any deficit that might be incurred by the establishment of this facility.<sup>115</sup> A manager was appointed for the new facility and *The Manchester Guardian* was soon reporting that the activities of the Testing House ‘fully justify the action of the Chamber of Commerce in undertaking this new and important branch of work.’<sup>116</sup>

The activities of the Testing House increased rapidly: the number of samples submitted for testing nearly quadrupled in the decade preceding the First World War (see Table 2). Alfred Rée, the chairman of the Testing House, claimed in 1932, ‘Originally instituted as a convenience for local firms [samples are now sent to the Testing House] not only from firms in Lancashire but from many parts of the world’.<sup>117</sup> The number of samples tested by the Testing House had increased to more than 27,000 per annum in 1930, up from about 2,700 in 1900. Based on these tests, the institution would issue ‘statements of opinion’ certifying the relative quality of samples of yarn or cloth, the causes of defects arising in manufacture, and whether disputed goods constituted fair marketable standards.<sup>118</sup> It was, at the time, an almost unique institution: the linen-testing house in Belfast and the wool-testing house in Bradford, although older, were much smaller in comparison.<sup>119</sup>

**[INSERT TABLE 2 HERE]**

Testing House rules required samples to be supplied for analysis: a minimum of one pound (weight) for moisture and count tests. Certificates issued by the Testing House referred only to the samples submitted and not the bulk from which they were taken.<sup>120</sup> For bundle yarns, testing to determine the moisture in a sample required comparison of the total moisture in the sample to its ‘absolutely dry weight’. Other tests compared the count determined ‘in condition received’, without correction for moisture, with the ‘count in correct condition’ once appropriate allowance had been made for moisture. In some cases, the Testing House was unable to provide an exact analysis of count. For example, it was difficult to state with exact accuracy the count of grey yarn *prior* to dyeing or bleaching. Tests could also authoritatively determine the count of yarn after it had been

woven into cloth – a crucial test if weavers doubted the counts indicated on their yarn purchases.<sup>121</sup>

The ‘scientific basis’ of the Testing House rules reflected the increasing use of more sophisticated and systematic sampling techniques for ascertaining quality measurements in British industry.<sup>122</sup> The centralization of such measurements with the Testing House, on the basis of which quality certificates were issued, limited the extent of measurements required to adjudicate disputes. It eliminated duplicative measurements, and projected an aura of scientific testing in resolving disputes regarding quality standards. Importantly, the rulings of the Testing House were legally enforceable in the Courts, as we show in the following section.

## **THE LEGACY OF MERCHANT INTERVENTION**

The legacy of merchant intervention is best understood as an attempt at quality control within the supply chain. The Testing House and uniform contract established centralised facilities for the testing of quality. Although within a couple of decades other rival testing facilities would emerge to compete with the MCC’s Testing House, the notion of centralised testing was definitively established within this industry. Concomitantly, the legality of the uniform contract was unequivocally established, both within the arbitration proceedings of the MCC as well as the broader legal framework. The standards that the merchants sought to impose were upheld in the few, albeit landmark, legal cases that were decided following the introduction of the uniform contract in 1897. Further, the ‘internal’ arbitration of disputes involving quality became more firmly established in this period.<sup>123</sup> The role of merchants in controlling this arbitration process remained contentious even in the early decades of the twentieth century. Such differences brought into sharper focus the question of who was ultimately responsible for the control of quality of the manufactured

product – the producers who spun the yarn or weaved the cloth or the merchants who owned the trade marks which were applied to these products? The producers had begun asserting a greater control over quality, especially towards the end of our period, through research on cotton fibres (inputs) and on processes. Even so, the influence of merchants on what constituted marketable quality remained substantial, especially in export markets. Ultimately, notions of quality, standards to enforce it, and its control along the supply chain, had to be reconstituted or re-evaluated as the textile industry experienced structural shifts: exports of cloth became significantly more important as compared to yarn between 1895 and 1914. We examine these issues below.

The uniform contract received a mixed response from spinners: Oldham firms adopted them enthusiastically, as did the FMCSA. However, other spinners associations did not support the uniform contract rules. Burnley argued that its members would insist on ‘full and regular counts’ without the assistance of uniform contracts; ‘every spinner and buyer could ignore the contract form and make any contract they chose.’<sup>124</sup> Bolton thought the sheer diversity of markets to which its yarns were sent would render a uniform contract worthless, as well as unnecessarily causing friction between buyer and seller.<sup>125</sup> The Blackburn Chamber of Commerce and the North and North East Lancashire Cotton Spinners’ Associations also declined to adopt uniform contracts.<sup>126</sup> The likely proportion of yarn covered by uniform contracts in this period was about 40 per cent, being the proportion of spindles or spinning capacity covered by FMCSA and OSMCA.<sup>127</sup>

Nonetheless, there was a rapid growth in centralised testing between 1899<sup>128</sup> and 1914: samples of yarns and textiles tested increased by threefold, whereas revenues from testing increased more than tenfold (Table 2). Textile samples accounted for over 80 per cent of the Testing House’s total activity. Testing of yarn amounted to between one-fifth

and one-third of all samples tested. In fact, the high demand for the testing of cloth, in addition to the demand for yarn testing, surprised the MCC.<sup>129</sup>

It is apparent from Tables 1 and 2 that the growth in the activities of the Testing House were closely aligned to the industry's international expansion in this period. This can be illustrated through the problem of maximum permissible standards of moisture (regain) in textiles. The International Congress for the Establishment of Uniform System of Numbering Yarn held at Turin, 1875, was the first to attempt to fix moisture standards for international trade in yarn. The 1875 congress specified that the maximum 'regain' on cotton textiles was 8.5 %. However, Manchester merchants did not accept this standard. Determining the true regain for yarn was problematic for a variety of reasons. The first issue was that the regain of 8.5 % was misleading – it only applied if the yarn was 'absolutely dry'. In addition, this regain was calculated using an 'average condition of the air', but in spinning mills, the amount of moisture varied between 3.5 and 7.5%.<sup>130</sup> In these circumstances, the MCC considered it impossible to set a 'true' standard, and consequently the activities of the Testing House were crucial to adjudicating on these differences.

Notwithstanding partial acceptance of the uniform contracting rules, the MCC could settle disputes involving quality of yarn or cloth on the basis of its testing facilities, particularly since its tribunal was a 'properly constituted court' under the Arbitration Act of 1889.<sup>131</sup> In addition, the voluntary nature of the uniform contract did not prevent such contracts from being legally enforceable in arbitration or courts of law. The case of *Atkinson & Co., v. Emmott*, both parties transacting on the Manchester Royal Exchange, is illustrative here. After a contract was signed the market price of yarn declined and the defendant refused to take delivery of the yarn. As the terms of the contract were governed

by the uniform contract rules, as stated in the contract, judgement was entered in favour of the plaintiffs. In *Pearl Mill Co v. Smith & Forrest* (1907), Judge Bradbury stated, ‘The practical effect [of the case] on the evidence before him, was to fix on spinners the standard of moisture fixed by the Manchester Testing-house... and if spinners desired to depart from [the standard] they must do so in their written contracts’.<sup>132</sup> The directors of the MCC received this judgement with considerable satisfaction.<sup>133</sup>

The activities of the Testing House and the Tribunal of Arbitration were not immune from criticism. A Manchester textile agent had claimed in 1905 that, ‘nobody in Manchester would take any notice of a Testing House Report; that the place consisted of a parcel of boys; and that the Testing House could not test correctly, or within 20%’.<sup>134</sup> Similarly, an anonymous letter, penned under the pseudonym ‘Merchant’ was published in the *Manchester Guardian* specifically criticising the competence of the Testing House to determine the true count of yarn from cloth samples: ‘I think it is nothing short of a public scandal that after an existence of fifteen years they have not yet discovered a reliable method of obtaining the counts of yarn in cloth’.<sup>135</sup> In the latter case, the complainant, Charles Duckworth, agreed to participate in a further trial in which the count of yarn would be determined prior to and after weaving. Three types of cloth were analysed and it was reported that the average difference between the count prior to weaving and after its conversion into cloth, was just 1.6 per cent. The MCC reported that, ‘no further action be taken, as the above mentioned test confirmed the reliability of the system of testing’.<sup>136</sup> Prior to 1914, we can find only one other reported complaint involving the determination of yarn counts from cloth and the MCC was able to firmly rebuke the complaint because all yarns had slight natural variation.<sup>137</sup>



The Tribunal, which was set up as a ‘merchant’s court’, also attracted some measure of criticism. With ‘merchants acting as judges’, some considered it a ‘dangerous experiment’ to exclude legal assistance to parties involved in the dispute.<sup>138</sup> The absence of legal representation was not strictly true as the MCC claimed that solicitors were allowed presence at Tribunal hearings. The real issue was the secrecy surrounding the proceedings of the Tribunal. A member of the MCC complained that even ‘ordinary information such as the number and nature of disputes and names of arbitrators, which should be on records of the Chamber is denied to its members.’<sup>139</sup> The MCC responded to this complaint by stating that ‘it would defeat the object for which the Tribunal of Arbitration was formed if greater publicity were given to the proceedings.’<sup>140</sup>

Testing House reports formed a crucial part of the Tribunal’s (and the MCC’s) efforts to minimise disputes arising from short reeling. When Elijah Helm wrote to the Bombay Chamber of Commerce about a sample of 20s count that turned out to be counts of 17.9s, he enclosed the Testing House ‘certificate of examination’ as evidence. The test showed that the samples had lengths of 720 yards, 743 yards, 681 yards and 712 yards, rather than the hank of 840 yards.<sup>141</sup> In 1910, the Tribunal claimed that as ‘usual, the most frequent class of cases [were those with] questions [regarding] whether goods supplied are or are not in accordance with the contract of sale, and whether they are to be rejected or accepted, with or without an allowance.’<sup>142</sup> Other representative results from reports issued by the Testing House are shown in Table 3. Even though by 1914, the Tribunal reported there were ‘fewer cases in which quality of condition of goods sold came into question’, this was more a reflection of the decline in the disputes referred to the Tribunal for that year.<sup>143</sup>

**[INSERT TABLE 3 HERE]**

Overall, apart from some specific (and isolated) complaints involving the assessment of yarn counts in cloth, the activities of the Testing House were favourably received. *The Times* reported in 1913 that this institution had, ‘admirably served the needs of the industry on the practical side’, and it acknowledged the ‘cutting-edge’ analysis of the Testing House in determining yarn counts from cloth.<sup>144</sup> The MCC reported that cotton manufacturers were intending to establish a similar facility in Boston, USA.<sup>145</sup> American manufacturers claimed that ‘analysis of testing of textile fibres is rapidly becoming more necessary’ cited the activities of the Manchester Testing House as an example of ‘advances in scientific examination’.<sup>146</sup> It is also apparent that certificates issued by the Testing House attesting to the particular attributes of samples were deployed in the advertising strategies of firms (Figure 1). This practice was not condoned by the MCC because it could undermine its impartiality, but it had no legal powers to prevent such advertisements.<sup>147</sup>

**[FIGURE 1 TO GO HERE]**

The yarn spinners and other manufacturers had an uneasy relationship with the merchants on the issue of uniform contracting and the Testing House facilities. In 1916, when the wartime government approached the Lancashire manufacturers with a proposal to set-up a research and testing facility independent of the MCC, many prominent manufacturers such as J W McConnel, H P Greg, W Lawrence Balls, and Kenneth Lee, supported this initiative. The discussions culminated in the establishment of the British Cotton Industry Research Association (BCRI) in 1919, rechristened shortly thereafter as the Shirley Institute. It offered yarn-testing facilities to rival those of the MCC’s Testing House.<sup>148</sup> This development was of great concern to the merchants and in later years the

MCC reported that the work of the Shirley Institute ‘was affecting the progress and position of the Testing House’, and that it needed to ‘watch with care any developments which might prove detrimental to the progress and position of the Testing House’.<sup>149</sup> Even though this competing facility set up by the manufacturers was some years in the future, the MCC had recognised this threat as early as 1907. The Testing House report for 1906 stated that the decrease in the number of yarn tests was because ‘certain firms have found it worthwhile to establish their own testing departments, and thus to withdraw some of their support from the Testing House.’<sup>150</sup> Greg and Co, had a well established testing room by the 1920s, wherein they would conduct their own tests on yarn bought from specialised spinning firms – a legacy of their decision to discontinue spinning their own yarn in 1894.<sup>151</sup>

## CONCLUSIONS

The case of merchant intervention in the Lancashire textile industry has broader significance beyond contributing to the considerable literature on this industry. This significance relates to how historians should study standards, law, institutions and historical markets. Philip Scranton and Patrick Fridenson have stressed the importance to business historians of investigating standards in which we not only glimpse the agency of historical actors, but also the outcome of contending interests at play<sup>152</sup>. This article has examined the efforts of Manchester merchants to enforce their standards along the supply chain to regulate what they considered to be the nefarious practice of short-measurements in yarn and cloth products. That they were only partially successful in our period does not diminish the significance of their influence on the textile industry. Through standardisation they sought to control product quality in an industry that had already gained a reputation for extreme product specialisation. Merchant intervention acted as an

integrating influence within an industry made of disintegrated modes of production and distribution: Gibbon terms this as ‘loosely filamented relationships lacking integration and hierarchy.’<sup>153</sup> Our case study demonstrates how such ‘merchant-driven’ supply chains were historically able to enforce quality standards, which, although challenging, were achievable without vertical integration. Existing historical studies have hitherto explored such issues in primary products. We contribute to the literature by exposing how this was true in important manufacturing sectors, such as textiles, as well.

Significantly, the article brings into focus the issue of how conflicting interests shape the standards and notions of quality that eventually dominate an industrial sector. The state-of-the-art understanding of standard recognises that standardisation is a political process.<sup>154</sup> Our case study especially highlights how the competition for control of the supply chains was an integral aspect of establishing standards.<sup>155</sup> Disentangling the standardisation process requires closer attention to competing interests vying for control of the supply chain: competition not just between firms in an horizontal relationship, but between firms in a vertical relationship within supply chains. In our case study, merchants invested considerable resources in imposing standards as it gave them control over product quality. Simultaneously, manufacturers attempted to retain flexibility in production – and thereby control over quality – by not enforcing too rigid a standard for yarn or cloth length. At stake was the choice between a restrictive but easy to monitor ‘one-size-fits-all’ standard that potentially stifled innovation, or multiple ‘competing’ standards that potentially increased the costs of monitoring and compliance, but provided manufacturers with the flexibility required in a highly competitive environment. The Lancashire textile industry grappled with such issues during the latter half of the nineteenth century.<sup>156</sup> This issue was substantially, but not conclusively, resolved by the end of our period.

The article further highlights the institutional conflicts surrounding standardisation. Standards exhibit characteristics of public goods, which does not preclude their origins as privately set standards; conversely, the adoption of publicly set standards need not imply mandatory compliance.<sup>157</sup> Are privately set but compulsory standards more effective in controlling product quality compared to standards that are publicly set, but whose adoption is voluntary and depends upon customs prevalent within the trade? Merchants grappled with these issues throughout the period we study. Differences in accepted norms within the trade generated discord between textile firms in terms of what constituted illegal deviation from product standards. This is evidenced by the conflict between Manchester merchants and producer firms from Lancashire, Glasgow and elsewhere in Europe and India. Such conflicting notions of acceptable (or *de facto*) standards show the limitations of national statutes to resolve the specific problems affecting the yarn trade. The national and international legislative environment governing misleading trade descriptions was insufficient in maintaining confidence in market transactions. The fundamental disjuncture between legislation and accepted trade use of terms was an important reason for this. The problems of obtaining sufficient evidence to satisfy the specific requirements of the Merchandise Marks Act of 1887, meant prosecutions were limited. Charles Bailey, who was employed by Ralli Brothers, claimed that the nominal damages awarded in successful litigation deterred many from instituting legal action.<sup>158</sup> As we have shown, such instances exposed the limitations of state legislation.

Merchant intervention in the form of uniform contracts and centralised testing facilities, aided the arbitration of disputes and mitigated the limitations of state legislation. This system effectively introduced a ‘private legal system’ that allowed the merchants to ‘internalise’ the governance and control of product quality.<sup>159</sup> The emergence of such a

quasi-legal system was not unique to the trade in textile manufactures, but it was very unusual for a manufactured commodity – usually these institutions are evident in markets involving primary commodities in this period. Our contribution to the state-of-the-art is to substantially highlight the significance of such private legal systems in Britain, and the manner in which such institutions operated at the boundary of civic and state society. Study of such institutions will allow historians to further develop a more nuanced and grounded understanding of commercial and economic institutions, rather than the binary of ‘absence or presence’ of legal institutions to promote governance.

This article additionally addresses more fundamental questions about the evolution of capitalism and market governance during the Victorian period. Paul Johnson has argued that, ‘the ways in which market structures were constructed in Victorian Britain is only indistinctly glimpsed in the literature’.<sup>160</sup> He further stresses that economists have tended to reify and simplify the market, assuming away the contestable and conditional nature of economic exchange. For example, the transaction-cost view describing market exchanges relegates the issue of quality, standardisation, and contract enforcement to ‘market-based governance’: that is, repeated transactions in a competitive setting.<sup>161</sup> Historians, too, have largely ignored the institutional processes by which market structures were created in nineteenth-century Britain.<sup>162</sup> The lack of both economic and historical understanding of markets as social spaces where groups with diverse interests contend with each other to specify the rules of exchange has resulted in a lopsided understanding of how market governance functioned.

In this article, we have responded to Paul Johnson’s call to pay greater attention to the institutional process through which rules of market exchange develop. We glimpse the conditional and contestable nature of market exchange and how rival groups sought more

direct means to govern it. We see how they attempted to develop solutions to transactional issues – standardising product quality - internally within the industry and overcome the limitations of state legislation (e.g. Merchandise Marks Acts). However, competition was also accompanied by cooperation between firms who fiercely competed for markets and resources: competition and cooperation are two sides of the same industrial coin.

**Competition threatened quality debasement which necessitated some degree of cooperation on quality standards.** As Robin Pearson has noted, in commercial relations

trust has to be laboriously constructed even if it is innately present in the culture of contracting parties or where a legal framework exists to encourage it.<sup>163</sup> People rely not only upon a general concept of trust and reputation, but also in specific dealings with other individuals.<sup>164</sup> In other words, market governance is based not only on *general* institutional arrangements (e.g. standards, legislation), but also on *specific* organisational arrangements (e.g. quality testing, dispute resolution mechanisms) that characterise an industry. In the Lancashire industry, generic notions of trust, reputation, and repeated interaction could no longer achieve governance. Redford shows how merchants claimed that methods to ‘shame the fraudulent’ largely remained unsuccessful after c1860.<sup>165</sup> Institutions, such as the MCC, dealt not only with strategic manipulations by dishonest firms, but also honest disputes that arose in the course of exchange. Such institutions were key organisational forms in an industry where the ‘visible hand’ of vertically integrated organisations accounted for a small percentage of capacity. They were ‘gap-filling’ in a highly specialized industry, just as business groups or integrated firms were when markets were thin.<sup>166</sup> Many nineteenth-century firms in Lancashire spun yarns, while some others ‘spun a yarn’. The market functioned because this industry was able to agree on standards and institutions to overcome the weaknesses of market-based exchange that state legislation could not.

## Bibliography

### Articles

Austin, Marc, and Helen Milner. "Strategies of European Standardization." *Journal of European Public Policy* 8: Special Issue (2001): 411-431.

Barzel, Yoram. "Measurement Cost and the Organization of Markets." *Journal of Law and Economics* 25 (1982): 27-48.

Bernstien, Lisa. "Private Commercial Law in the Cotton Industry: Creating Cooperation through Rules, Norms, and Institutions", *Michigan Law Review*, 99 (2001): 1724-1790.

Bevir, Mark, and Frank Trentmann. "Markets in Historical Contexts: Ideas, Practices and Governance." In *Markets in Historical Contexts: Ideas and Politics in the Modern World*. eds. Mark Bevir and Frank Trentmann. Cambridge: Cambridge University Press, 2004, 1-24.

Biggs, Norman. "A Tale Untangled: Measuring the Fineness of Yarn." *Textile History* 35 (2004): 120-129.

Broadberry, Stephen, and Andrew Marrison. "External Economies of Scale in the Lancashire Cotton Industry, 1900–1950." *The Economic History Review* 55 (2002): 51-77.

Brunsson, Nils, and Bengt Jacobsson. "The Contemporary Expansion of Standardisation." in *A World of Standards*. eds. Nils Brunsson and Bengt Jacobsson. Oxford: Oxford University Press, 2000: 1-20.

Carnevali, Francesca. "Social Capital and Trade Associations in America, c.1860-1914: A Microhistory Approach." *The Economic History Review* 64 (2011): 905-928.

Chapman, Stanley. "The Commercial Sector." in *The Lancashire Cotton Industry*. Ed Mary Rose. Preston: Lancashire County Books, 1996: 63-93.

David, Paul. 'Clio and Economics of QWERTY', *American Economic Review* 75 (1985): 332-37

Duguid, Paul. "Developing the Brand: The Case of Alcohol, 1800-1880." *Enterprise & Society* 4, no. 3 (2003): 405-441.

Duguid, Paul. "Networks and Knowledge: The Beginning and End of the Port Commodity Chain, 1703-1860." *Business History Review*, 79, no.3 (2005): 453-466.



- Dupree, Marguerite. "Foreign Competition and the Interwar Period." in *The Lancashire Cotton Industry*. ed. Mary Rose, Preston, Lancashire County Books, 1996: 265-295.
- Ellenbogen, Gershon. "English Arbitration Practice." *Law and Contemporary Problems* 17 (1952): 656-678.
- Ellinger, Barnard, and Hugh Ellinger. "Japanese Competition in the Cotton Trade." *Journal of the Royal Statistical Society* 93 (1930): 185-232.
- Farnie, Douglas. "An Index of Commercial Activity: The Membership of the Manchester Royal Exchange, 1809-1948." *Business History* 21 (1979): 97-106.
- Farrell, Joseph, and Garth Saloner. "Coordination Through Committees and Markets." *The RAND Journal of Economics* 19 (1988): 235-252.
- Ferguson, Robert. "The Adjudication of Commercial Disputes and the Legal System in Modern England." *British Journal of Law and Society* 7 (1980): 141-15.
- Gereffi, Gary, John Humphrey, and Timothy Sturgeon. "The Governance of Global Value Chains." *Review of International Political Economy* 12 (2005): 78-104.
- Gibbon, Peter. "Upgrading Primary Production: A Global Commodity Chain Approach." *World Development* 29 (2001): 345-336.
- Granovetter, Mark. "Economic Action and Social Structure: The Problem of Embeddedness." *American Journal of Sociology* 91 (1985): 481-510.
- Halliday, Fred. "The millet of Manchester: Arab merchants and cotton trade," *British Journal of Middle Eastern Studies* 19 (1992): 159-176,
- Helm, Elijah. "The Middleman in Commerce." *Transactions of the Manchester Statistical Society* 1901 (1900): 55-65.
- Henson, Spencer, and John Humphrey. "Understanding the Complexities of Private Standards in Global Agri-food Chains As They Impact Developing Countries." *The journal of development studies* 46 (2010): 1628-1646.
- (1996) Higgins, David and Geoffrey Tweedale. "The Trade Marks Question and the Lancashire Cotton Textile Industry, 1870-1914', *Textile History*, 27, no.2 (1996): 207-228.
- Higgins, David and Steve Toms, "Firm Structure and Financial Performance: the Lancashire Spinning Industry, c1880-c.1960', *Accounting, Business and Financial History*, 7 (1997): 195-232.
- Huberman, Michael. "Piece Rates Reconsidered: The Case of Cotton." *Journal of Interdisciplinary History* 26 (1996): 393-417.
- Jeremy, David. "Lancashire and the International Diffusion of Technology." in *The Lancashire Cotton Industry*. Ed Mary Rose. Preston: Lancashire County Books, 1996: 210-237.

Jewkes, John, and Sylvia Jewkes. "A Hundred Years of Change in the Structure of the Cotton Industry." *Journal of Law and Economics* 9 (1966): 115-134.

Kenny, Stephen. "Sub-regional Specialization in the Lancashire Cotton Industry, 1884-1914: A Study in Organizational and Locational Change." *Journal of Historical Geography* 8 (1982): 41-63.

Kindelberger, Charles. "Standards As Public, Collective and Private Goods." *Kyklos* 36 (1983): 377-396.

Langlois, Richard. "Economic Institutions and the Boundaries of the Firm: The Case of Business Groups.", in *Oxford Handbook of Business Groups*. eds. Asli Colpan, Takashi Hikino and James Lincoln. Oxford University Press, 2010: 629-649.

Lazonick, William. "Industrial Organization and Technological Change: The Decline of the British Cotton Industry", *Business History Review*, 57 (1983): 195-236.

Lazonick, William. "The cotton industry", in *The Decline of the British Economy*. eds. Bernard Elbaum and William Lazonick, Clarendon Press, 1987: 18-50.

Leunig, Timothy. "A British Industrial Success: Productivity in the Lancashire and New England Cotton Spinning Industries a Century Ago." *The Economic History Review* 56 (2003): 90-117.

Lipartito, Kenneth. "The New York Cotton Exchange and the Development of the Cotton Futures Market." *The Business History Review* 57, (1983): 50-72.

Marrison, Andrew. "Indian Summer, 1870-1914", in *The Lancashire Cotton Industry*. ed. Mary Rose, Preston, Lancashire County Books, 1996: 238-264.

Mass, William and William Lazonick. "The British Cotton Industry and International Competitive Advantage: the State of the Debates", in *International Competition and Strategic Response in the Textile Industries since 1870*. ed. Mary Rose. London: Routledge, 1991: pp. 9-65.

McDowell, James. "Cotton Fibres From a Layman's Point of View." *Transactions of The National Association of Cotton Manufacturers* No. 114 (1923): 238-271.

Ogilvie, Sheilagh. "'Whatever Is, Is Right'? Economic Institutions in Pre-industrial Europe." *Economic History Review* 60 (2007): 649-684.

Olmstead, Alan L, and Paul W Rhode. "Hog-round Marketing, Seed Quality, and Government Policy: Institutional Change in US Cotton Production, 1920-1960." *The Journal of Economic History* 63 (2003): 447-488.

Pearson, Robin. "Moral Hazard and the Assessment of Insurance Risk in Eighteenth- and Early-Nineteenth-Century Britain." *The Business History Review* 76 (2002): 1-35.

Pirrong, Stephen Craig. "The Efficient Scope of Private Transactions-cost-reducing Institutions: The Successes and Failures of Commodity Exchanges." *The Journal of Legal studies* 24 (1995): 229-255.

Ponte, Stefano, and Peter Gibbon. "Quality Standards, Conventions and the Governance of Global Value Chains." *Economy and Society* 34 (2005): 1-31.

Quark, Amy. "Transnational Governance as Contested Institution-Building: China, Merchants, and Contract Rules in the Cotton Trade." *Politics & Society* 39 (2011): 3-39

Rée, Alfred. "The Manchester Chamber of Commerce Testing House." in *Manchester Chamber of Commerce Handbook*. Manchester, 1932.

Rose, Mary B. "Role of the Family in Providing Capital and Managerial Talent in Samuel Greg and Company 1784–1840," *Business History*, 19 (1977): 37-54

Simpson, A. W. Brian. "The Origins of Futures Trading in the Liverpool Cotton Market", in *Essays for Patrick Atiyah*. eds. Peter Cane and Jane Stapleton. Oxford: Oxford University Press, 1991: 179-208.

Simpson, James. "Cooperation and Conflicts: Institutional Innovation in France's Wine Markets, 1870-1911." *Business History Review*, 79, no.3 (2005): 527-558.

Velkar, Aashish. "Transactions, Standardisation and Competition: Establishing Uniform Sizes in the British Wire Industry C.1880." *Business History* 51, no. 2 (2009): 222-247

Ville, Simon. "Rent Seeking or Market Strengthening? Industry Associations in New Zealand Wool Broking." *Business History Review* 81 (2007): 297-321.

Weiss, Martin B H, and Marvin Sirbu. "Technological Choice in Voluntary Standards Committees: An Empirical Analysis." *Economics of Innovation and New Technology* 1 (1990): 111-133.

Williamson, Oliver E. "Transaction-Cost Economics: The Governance of Contractual Relations." *Journal of Law and Economics* 22 (1979): 233-261.

## *Books*

Beckert, Sven. *Empire of Cotton: A Global History*. Vintage, 2015

Bodenhause, Georg. *Guide to the Application of the Paris Convention for the Protection of Industrial Property*, United International Bureau for the Protection of Intellectual Property, 1969;reprinted by the World Intellectual Property Organization, 1991.

Bowbrick, Peter. *The Economics of Quality, Grades and Brands*. London and New York: Routledge, 1992

Chapman, Stanley. *Merchant Enterprise in Britain: From the Industrial Revolution to World War I*. Cambridge: Cambridge University Press, 1992

Clay, Henry. *Confidential Report on the Position of the English Cotton Industry*. London: Securities Management Trust, 1931.

Ellison, Thomas. *The Cotton Trade of Great Britain : Including a History of the Liverpool Cotton Market and of the Liverpool Cotton Brokers' Association*. London: E Wilson, 1886.

Farnie, Douglas. *English Cotton Industry and the World Market, 1815-1896*. Oxford: Clarendon Press, 1979.

Garside, Alston. *Cotton Goes to Market : A Graphic Description of a Great Industry*. New York: Frederick A. Stokes Company, 1935.

Helm, Elijah. *Chapters in the History of the Manchester Chamber of Commerce*. London: Simpkin, Marshall, Hamilton, Kent & Co, 1902.

Huberman, Michael. *Escape From the Market: Negotiating Work in Lancashire*. Cambridge: Cambridge University Press, 1996.

International Cotton Congress, *Report of the second international congress of Master Cotton Spinners' and Manufacturers' Associations*. Manchester, 1905.

Johnson, Paul. *Making the Market: Victorian Origins of Corporate Capitalism*. Cambridge: Cambridge University Press, 2010.

Ladas, Stephen. *Patents, Trademarks and Related Rights*. Volume III. Harvard: Harvard University Press, 1975.

Levi, Leone. *Chambers and Tribunals of Commerce and the Proposed General Chamber of Commerce in Liverpool*. London: Simpkin, Marshall and Company, 1849.

*Manchester Chamber of Commerce (MCC) Handbook*. Manchester, 1932.

McIvor, Arthur. *Organised Capital: Employers' Associations and Industrial Relations in Northern England, 1880-1939*. Cambridge University Press, 2002

Mitchell, Brian. *Abstract of British Historical Statistics*. Cambridge: Cambridge University Press, 1962.

Murphy, Craig, and JoAnne Yates. *The International Organization for Standardization (ISO): Global Governance Through Voluntary Consensus*. New York: Routledge, 2009.

*Notes on Sampling: The Handbook of the Testing House and Laboratory*, 2<sup>nd</sup> edition, Manchester, 1913.

PEP Industries Group. *Report on the British Cotton Industry*. London: Political and Economic Planning, 1934.

Redford, Arthur. *Manchester Merchants and Foreign Trade, Vol. II:1850-1939*. Manchester: Manchester University Press, 1956.

*Report of the Committee of the Bengal Chamber of Commerce*, Calcutta, 1889.

Robson, Ronald. *The Cotton Industry in Britain*. London: Macmillan, 1957.

Rose, Mary. *Firms, Networks and Business Values: The British and American Cotton Industries since 1750*. Cambridge: Cambridge University Press, 2000.

Sawbridge, Maureen ed., *The Story of Shirley: a history of the Shirley Institute, Manchester, 1919-1988*, Manchester: Shirley Institute, 1988.

Scranton, Philip, and Patrick Fridenson. *Reimagining Business History*. Baltimore: JHU Press, 2013.

Sebastian, Lewis. *The Law of Trade Marks*. Stevens and sons, 1911.

Stanziani, Alessandro. *The Rules of Exchange: French Capitalism in Comparative Perspective, eighteenth to the early twentieth centuries*. New York: Cambridge University Press, 2012.

Velkar, Aashish. *Markets and Measurements in Nineteenth-century Britain*. Cambridge Studies in Economic History. Cambridge: Cambridge University Press, 2012.

Ziliak, Stephen, and Deirdre McCloskey. *The Cult of Statistical Significance*. Michigan: University of Michigan Press, 2008.

#### *Official Reports and Publications*

*Royal Commission on the Depression on Trade and Industry: Part I*. British Parliamentary Papers (PP) 1886, Vol. XXI.

*Select Committee on the Trade Marks Bill and Merchandize Marks Bill*. PP 1862, Vol. XII

*Select Committee on Merchandise Marks Act Amendment Bill*. PP 1887, Vol. X

*Cotton*. UK Board of Trade, Working Party Reports. London, 1946.

#### *Archives*

*Archives of the Manchester Chamber of Commerce*, Greater Manchester County Record Office, Manchester.

*Archive of the Oldham Master Cotton Spinners Association*, John Rylands Library, Manchester.

*Records of J & P Coats Ltd*, Glasgow University Archive Services, Glasgow.

*Records of United Turkey Red Co.*, Glasgow University Archive Services, Glasgow.

*Records of Bolton Master Cotton Spinners Association*, Bolton Local Studies and Archives, Bolton.

- 
- <sup>1</sup> Leunig, “British Industrial Success,” 90.
- <sup>2</sup> Jeremy, “The Diffusion,” 231.
- <sup>3</sup> Calculated from Dupree, “Foreign Competition”: 273. Although these data refer to the UK, the cotton-textile industry was predominantly Lancashire-based. For example, by the late 1890s, Lancashire accounted for 75.8 per cent of the cotton operatives employed in the UK. Broadberry and Marrison, “External Economies,” 55.
- <sup>4</sup> Spinning refers to the process of converting raw cotton into yarn. Manufacturing refers to weaving, when yarn is made into cloth.
- <sup>5</sup> Jewkes and Jewkes, “Hundred Years,” 118.
- <sup>6</sup> Ellinger and Ellinger, “Japanese Competition,” 185.
- <sup>7</sup> See, for example: Kenny, “Sub-regional specialisation”; Farnie, *The English Cotton Industry*.
- <sup>8</sup> There is a substantial literature in this field. See, for example, Higgins and Toms, ‘Firm structure’; Lazonick, “Industrial Organisation”; idem, “The Cotton Industry”; Leunig, “British Industrial Success”; Rose, *Firms, Networks*;
- <sup>9</sup> Broadberry and Marrison, “External Economies”.
- <sup>10</sup> Helm, “The Middleman,” 60; 65.
- <sup>11</sup> Political and Economic Planning, *Report*: 71.
- <sup>12</sup> By 1912, there were 10.3 million ring spindles in the industry (which equates to about 25 % of capacity). Calculated from Robson, *The Cotton Industry*, Table 5, p. 339, using the standard’ assumption that one ring spindle was about 1.5 more productive than a mule spindle. *Irrespective* of whether the yarn was mule-spun or ring-spun, the MCC was adamant that the standard hank should be 840 yards.
- <sup>13</sup> See, for example, the recent conference, ‘Making Markets: Histories of Commodity Grading and Trading’ organised by the *Centre for Science, Technology, Medicine & Society*, UC Berkeley (20 November, 2015). The conference programme states that the ‘technical aspects of grading and trading

---

[are] often overlooked by historians...[the] practices of measurement and exchange are at the heart of the process of commoditization.’ This conference focused on a variety of commodities, including grain, lumber, metals and slavery. <http://cstms.berkeley.edu/current-events/making-markets/>. Our paper demonstrates that a major manufacturing industry grappled with similar problems.

14 Ville, “Rent Seeking,” 319.

15 Pirrong, “Efficient Scope,” 232-236

16 Lipartito, “New York Cotton Exchange,” 55.

17 Ponte and Gibbon, ‘Quality standards’, p. 2. There is considerable literature on global value chains where such merchants or merchant intermediaries play important governance roles. For instance, Gereffi, Humphrey and Sturgeon, ‘Governance’; Gibbon, ‘Primary Production’; Henson and Humphrey, ‘Understanding the complexities’.

18 Quark, ‘Transnational Governance’, p. 5. For similar arguments in a historical setting, compare Olmstead and Rhode ‘Hog-round marketing’, Bernstein ‘Private Commercial Law’; Simpson, ‘Origins of Futures’.

19 Stanziani, *Rules of Exchange*, 115-144

20 For example, producers may define quality in narrow terms, but consumers may define quality more broadly: quality definitions depends upon who is measuring it. Velkar, *Markets and Measurements*, p. 172-175; Bowbrick, *Economics of quality*, 2-11; Barzel, “Measurement Cost,” 28-32.

21 Simpson, “Cooperation,” 547; 550-551.

22 Duguid, “The Beginning,” 522.

23 Political and Economic Planning, *Report*: 71.

24 See, for example, Chapman, *Merchant Enterprise*: 188; 200.

25 Higgins and Tweedale, “The Trade Marks Question,” 213.

26 Chapman, “The Commercial,” 84.

27 Ogilvie, ‘Economic Institutions’, 674

28 Bevir and Trentmann, ‘Markets’, 7

- 
- 29 Scranton and Fridenson, *Reimagining Business History*, 160.
- 30 Johnson, *Making the Market*, 3
- 31 Mass and Lazonick, 'British Cotton Industry', 16.
- 32 Marrison, "Indian Summer," 243-249. Historiography attributes such trends to growing international competition in export markets, especially for coarser yarn and cloth, as well as growing domestic demand for yarn to fuel the export boom in cloth and piece goods after 1900.
- 33 Rose, "Role of family," 39-40.
- 34 Beckert, *Empire*: 150.
- 35 Broadberry and Marrison, "External," 56; Clay, *Confidential Report*: 2.
- 36 PEP, *Report*: 69. This report was published in 1934 when the industry's export markets had collapsed. The industry enjoyed substantial export growth just prior to 1914, and it is likely that yarn agents accounted for an even greater proportion of yarn sales during the boom.
- 37 Political and Economic Planning, *Report*: 34.
- 38 Board of Trade, Working Party Reports: *Cotton*: 44.
- 39 Chapman, *Merchant Enterprise*: 155; Beckert, *Empire*: 232-233.
- 40 Chapman, *Merchant Enterprise*: 157.
- 41 Chapman, *Merchant Enterprise*: 155-159.
- 42 Beckert, *Empire*: 151.
- 43 Halliday, 'Millet of Manchester', p. 161.
- 44 Helm, *Chapters in the History*: 1.
- 45 Redford, *Manchester Merchants*, 299; Farnie, 'Index'.
- 46 Beckert, *Empire*: 237; 251-256.
- 47 Beckert, *Empire*: 236.
- 48 **The count of yarn determined its subsequent manufacture: coarse-medium yarns were used to produce a range of products including belting, cleaning cloths, heavy-sheetings, ropes, sailcloth. Fine yarns were processed into,**



---

**cambrics, handkerchiefs, lace, and muslins. Clay, *Confidential Report*: 11-12. For the historical development of the counts system see Biggs, ‘Tale Untangled’.**

<sup>49</sup> *Huddersfield Chronicle and West Yorkshire Advertiser*, 21 Jan. 1860, 5; 3 Mar. 1860, 6.

<sup>50</sup> *Grocer*, 5 Feb. 1910, 329-330; *Select Committee on Trade Marks Bill (P.P. 1862, XII)*, QQ. 1420-1431.

<sup>51</sup> *Leeds Mercury*, 7 Aug. 1862, 3

<sup>52</sup> Calculated from Mitchell, *Historical Statistics*, Tables 4 and 15, 182, 197.

<sup>53</sup> *Report from the Select Committee on the Merchandise Marks Act (1862) Amendment Bill*, (10 P.P. 357): Q.3838; Q. 4237; QQ. 4454-4462; QQ. 4533-55;

<sup>54</sup> *Ibid.* QQ. 4469-4472.

<sup>55</sup> Greater Manchester County Record Office, Manchester Chamber of Commerce, (hereafter GMCRO, MCC), M8/2/10: 24 June, 1891; 21 October, 1891; 24 February, 1892.

<sup>56</sup> GMCRO MCC M8/2/11, 26 March 1890; 22 September 1890; 22 July 1891; 21 October 1891; M8/4/31, 18 March 1890; 5 August 1890; 25 November 1890; 20 January 1891; M8/4/32, 24 November 1896; 4 April 1898; 14 May 1898; 27 June 1898; M8/4/34, 9 March 1898; 22 February 1901.

<sup>57</sup> GMCRO, MCC, M8/2/10, 13 October 1886; 28 March 1888; S. C. on Merchandise Marks (P.P 1887, X), Q.3624; QQ. 4464-4472.

<sup>58</sup> GMCRO, MCC, M8/4/31, Yarn Section Minutes, 14 October 1890; 25 November 1890; 14 July 1891; 29 January 1892.

<sup>59</sup> GMCRO MCCM8/2/10: 28 September, 1886; 13 October, 1886; 22 October, 1886

<sup>60</sup> MCC to Collector of Customs, Calcutta and the Bengal Chamber of Commerce, 18 March 1904, *MCC Monthly Record*, 1904 Vol XV, pp. 70-72, 145.

<sup>61</sup> *MCC Monthly Record*, 1910 Vol XXI, pp. 308-9,347.

<sup>62</sup> Huberman, ‘Piece Rates’, 410; Lazonick, ‘British Cotton Industry’, 21; 26-27.; Also, John Rylands Library, Manchester (hereafter JRL), Archive of the Oldham

---

Master Cotton Spinners Association (hereafter OMCSA) GB 133 OLD/1/5/1 Calendar of Cases (1905-1915). Lancashire spinning firms used inferior cotton as a cost-minimising strategy to maintain their competitive advantages under increasing international pressures. The resultant ‘bad spinning’ further deteriorated already tenuous industrial relations, which the industry dealt with through a series of cooperative arrangements, between workers and firms, and between spinning firms; Huberman, *Escape from Market*.

<sup>63</sup> 25 & 26 Victoria, c.88, The Merchandise Marks Act, 1862, was amended by 50 & 51 Vict. ch.28, The Merchandise Marks Act, 1887, which was a more comprehensive statute.

<sup>64</sup> Newspaper reports indicate that some spinners were instructed by merchants to short-reel. *Manchester Guardian*, 21 February, 1888:4; 23 February, 1888:4.

<sup>65</sup> *Notes on Sampling*, pp.24-33. Select Committee on Merchandise Marks (P.P 1887, X), Q. 3653.

<sup>66</sup> *Report from the Select Committee on the Merchandise Marks Act (1862) Amendment Bill*, (10 P.P. 357): Testimony by George Lord, President of the Manchester Chamber of Commerce, Q.3571; Q. 3669.

<sup>67</sup> 50 & 51 Vict., Ch.28 *Merchandise Marks Act*, 1887: s 2 (d); s 3 (i), (ii).

<sup>68</sup> *Report from the Select Committee on the Merchandise Marks Act*, 1887 (1890): iii.

<sup>69</sup> *Report from the Select Committee on the Merchandise Marks Act (1862) Amendment Bill*, (10 P.P. 357): QQ. 3838-39; QQ.3879-81.

<sup>70</sup> The general practice in making up bundle yarns was to place together five hanks, each of 840 yards, into a ‘knot’ and press into bundles of five or ten pounds weight. In the absence of short-reeling, the true count of a yarn was equal to half the number of ‘knots’. But short reeling meant that the number of ‘knots’ was no longer an accurate indicator of count or length. *Manchester Guardian*, 23 Feb. 1888, 4.

<sup>71</sup> *Manchester Guardian*, 23 Feb. 1888, 4.

<sup>72</sup> *Ibid.*

- 
- 73 Ibid.
- 74 *Manchester Guardian*, 6 Mar. 1888: 4.
- 75 GMCRO, MCC, M8/2/10, May 1887.
- 76 *Manchester Guardian*, 7 Dec. 1888, 4.
- 77 Sebastian, *Trade Marks*: 674.
- 78 GMCRO MCC, M8/2/11, 18 November 1891. M8/4/31, 20 January 1891; 11 February 1891; 27 October, 1891
- 79 Ibid., 12 January 1892, emphasis in the original.
- 80 GMCRO MCC M8/2/11, 27 January 1890.
- 81 GMCRO, MCC M8/2/11, 22 September, 1890; 22 July, 1891; M8/4/31, 14 October, 1890; 25 November, 1890; 20 January, 1891; 14 July, 1891
- 82 GMCRO MCC M8/2/11: 30 Sept 1891.
- 83 GMCRO MCC, M8/4/31, Esarco to MCC 27 October, 1891; 19 December, 1893
- 84 GMCRO MCC M8/4/32, 18 December, 1913.
- 85 **‘Unfair competition’, refers to any act contrary to honest practice in industrial and commercial matters. It is a doctrine which extends far beyond the protection of particular types of intellectual property, such as patents and trade marks. Ladas, *Patents*, Vol. III, 1705. An International Convention for the Protection of Industrial Property was first convened in Paris in 1883, mostly dealing with *specific* forms of intellectual property: no specific Article was dedicated to ‘unfair competition’. It was not until The Hague Convention (1925), that a clear and comprehensive definition of ‘unfair competition’ was provided. Countries with which the MCC was most concerned, Bulgaria, Roumania and Turkey, did not accede to the Paris Convention until 1921, 1920 and 1925, respectively. A more detailed treatment of this point is beyond the scope of this paper. We are grateful to a referee for bringing this to our attention.**
- 86 The Indian Act was not introduced *only* as a result of the lobbying of the MCC. India, along with other members of the British Empire – Australia and New Zealand, for example - was required to enact similar legislation to the Merchandise

---

Mark Act, 1887, once Britain acceded to the 1883 Paris Convention for the Protection of Industrial Property.

<sup>87</sup> S. C. on Merchandise Marks (P.P 1887, X), Q.3572; Q.3575; Q. 3604; Q. 3606; Q. 3765; Q. 4220; QQ. 4248-4251; Q.4280; QQ. 4406-14. It was not until 1889 that the Indian government adopted the imperial yard as a legal measure. Report of the Committee of the Bengal Chamber of Commerce, Calcutta, 1889: 83

<sup>88</sup> GMCRO MCC M8/2/10, Proceedings of the Manchester Chamber of Commerce, 1885-1890, 22 October 1886; 24 January, 1887; 23 February, 1887; 28 March, 1888. The Chamber urged its members who were MP's to continue to raise this issue in the House of Commons.

<sup>89</sup> *Times of India*, 22 Oct. 1888, p. 6. See also the extensive discussions by Bengal Chamber of Commerce on the Merchandise Marks legislation in India and its significance for short-reeling of yarn in *Report of Bengal Chamber of Commerce*, 1889, pp. 23-24, 34-35, 46; 1904, pp. 425-438.

<sup>90</sup> *Times of India*, 31 Jan. 1889, p.6. Florence Peel, a Manchester and Calcutta merchant had testified earlier that the absence of a legal standard for yarn length in India may have encouraged short-reeling; S. C. on Merchandise Marks (P.P 1887, X), Q. 4280.

<sup>91</sup> *The Indian Merchandise Marks Act*, Act IV, 1889, pp. 337-345.

<sup>92</sup> *ibid.*, s 4 (3); s 20.

<sup>93</sup> *Times of India*, 7 Dec. 1892, p.5.

<sup>94</sup> GMCRO MCC M8/4/34, Manchester Yarn Contract Conference, 1896-1913, 9 March 1898.

<sup>95</sup> *The Indian Merchandise Marks Act*, Act IV, 1889, s 16.

<sup>96</sup> This committee was comprised of some of the most famous merchant houses in the cotton textile trade, for example, Ralli Brothers. *Times of India*, 16 Jan. 1890, p.5.

<sup>97</sup> *Times of India*, 3 Apr. 1891, p.6.

<sup>98</sup> *Judicial Notification 1474*, Calcutta, 13 November 1891. *Times of India*, 7 Apr. 1897, p.4. Glasgow University Archival Service, Records of United Turkey Red

- 
- Co. Ltd, UGD 13/5/13/1/5, *Letters*, Letter to Under Secretary of State for India, 28 October 1897; GMCRO, MCC, M8/4/31, Minutes of the Yarn Section: Minutes of a Meeting of the Executive Committee 14 June, 1891;
- <sup>99</sup> GMCRO, MCC, M8/2/10, Proceedings of the Manchester Chamber of Commerce, Meeting of the Board of Directors, 22 September, 1890; M8/4/31, Minutes of the Yarn Section 23 march, 1890; 14 July, 1891.
- <sup>100</sup> GMCRO MCC M8/2/11, 17 March 1890; 30 June, 1890; 18 December, 1895; M8/4/34, Notes of Conference at Carlisle, 9 March, 1898, 8-9.
- <sup>101</sup> GMCRO MCC M8/4/32, Minutes of the Yarn Contract Committee, 1896-1919, 24 November 1896.
- <sup>102</sup> GUAS Records of United Turkey Red Co., UGD 13/5/13/1/5, *Letters*, Letter to Under Secretary of State for India, 28 October 1897.
- <sup>103</sup> GMCRO MCC M8/4/32, Minutes of the Yarn Contract Committee, 14 May 1898; 23 September 1903; 28 November 1904.
- <sup>104</sup> Ibid., 4 April 1898; 27 June 1898; 23 April 1901.
- <sup>105</sup> GMCRO, MCC, M8/4/31, Minutes of the Yarn Section.
- <sup>106</sup> GMCRO, MCC, M8/4/31. Minutes of the Yarn Section, Third Meeting of the Joint Conference, 4 December, 1895; Fourth Meeting of the Joint Conference, 18 December, 1895.
- <sup>107</sup> GMRCO, MCC Minutes of the Yarn sectional Committee M8/4/31, 18 June, 1896, full specification of Yarn Contract Rules.
- <sup>108</sup> JRL OMCSA, GB 133 OLD/6/8/5, Reports of Committee, 1895, p19. GMCRO MCC, M8/4/31, Minutes of the Yarn Section, 1890-1896, 4 January 1895; 11 January 1895; 18 January 1895; 1 February 1895; 22 February 1895; 20 March 1895.
- <sup>109</sup> JRL OMCSA, GB 133 OLD/6/8/2, Reports of Committee, 1892, 13.
- <sup>110</sup> JRL OMCSA, GB 133 OLD/6/8/4, Reports of Committee, 1894, 18
- <sup>111</sup> GMCRO MCC Minutes of the Yarn Section, M8/4/31, 28 May, 1895.

- 
- <sup>112</sup> See, for example, GMCRO MCC Minutes of the Yarn Sectional Committee/Joint Conference, M8/4/31, 18 June, 1895; 21 November, 1895; 4 December, 1895; 18 December, 1895; 15 January. 1896.
- <sup>113</sup> Ibid.
- <sup>114</sup> GMRCO MCC, Minutes of the Yarn Sectional Committee, 1890-1896, M8/4/31, 15 November, 1893.
- <sup>115</sup> GMCRO MCC, M8/4/32, Minutes of the Yarn Section, 1896-1919, 21 October 1897; M8/4/31, Minutes of the Yarn Section, 1890-1896, 15 November 1893; 15 May 1895.
- <sup>116</sup> *Manchester Guardian*, 7 Aug. 1895, 4.
- <sup>117</sup> Rée, 'Testing House', 63
- <sup>118</sup> Ibid., 65
- <sup>119</sup> 'The New Testing House: How Manchester Goods are Guaranteed', *Manchester Guardian*, 29 Jan 1922, 11. A similar institutions existed in Paris at the time that, in 1904, was roughly the same in size as the Manchester Testing House, *Monthly Record*, 1904 Vol XV, pp. 162-4
- <sup>120</sup> *Notes on Sampling*, 81-83.
- <sup>121</sup> Ibid., 22-31.
- <sup>122</sup> Simpson, 'Origin of Futures', 186; Ellison, *Cotton Trade*, 177; Garside, *Cotton*. 79; Velkar, *Markets and Measurements*, 187-191. William Gosset, pioneered the use of statistical tests while working at Guinness in the early nineteenth century. Ziliak and McCloskey, *The Cult of Statistical Significance*, 18-20.
- <sup>123</sup> Arbitration of contracts in *cotton purchasing* in Liverpool or New York had emerged earlier, but there was no parallel system of arbitration of the contracts for the *manufactured* product such as yarn or cloth within the manufacturing industry in Lancashire. Simpson argues that regulation of cotton trading was 'outside the regular law' and 'traders organized and policed the system themselves'; Simpson, 'Origins of Futures', p. 207. Similarly, Leone Levi's proposals to establish the Liverpool Chamber of Commerce in 1849 contain explicit arguments for establishing a 'local tribunal' to settle commercial disputes through the 'judgement

- 
- of commercial and practical men.’ Levi, *Chambers of Commerce*, 15; also, Ferguson, ‘Commercial Disputes’.
- 124 GMCRO MCC, M8/4/31, Minutes of the Yarn Section, 1890-1896, 21 November 1895.
- 125 Bolton Local Studies and Archives, Bolton Master Cotton Spinners Association, FET/1/1/3, General Standing Committee Report, 16 October 1896.
- 126 GMCRO MCC, M8/4/31, Minutes of the Yarn Section, 1890-1896, 16 September 1896. JRUL OMCSA, GB 133 OLD/6/8/6, Reports of Committee, 1896, 10.
- 127 **Our estimates are based on the total capacity for Lancashire reported by Mitchell *Historical Statistics*, (p. 372) and those reported by OSMCA and FMCSA for the year 1892, John Rylands Library, Manchester, Archive of the Oldham Master Cotton Spinners Association, OLD/6/8/2, Reports of Committee, 1892, pp. 6-7. This estimate corresponds closely with the proportion of spindlage reported by McIvor, *Organised Capital*, (p. 63), for FMCSA (39.2% for 1892) that he calculates using various *Yearbooks and Annual Reports* and *Worrall’s Cotton Spinners Directories*.**
- 128 The first year for which figures are available
- 129 *Notes on Sampling*, 8
- 130 *Notes on Sampling*, 9-14.
- 131 Ellenbogen, ‘English Arbitration Practice’, 658; GMCRO, MCC, M8/4/28, Testing House Management Committee, 23 January, 1908; *MCC Handbook*, 1932, 69
- 132 *Manchester Guardian*, 17 May 1907, 11; 31 May 1907, 11; 4 Jul. 1907, 4.
- 133 GMCRO, Minutes of the Yarn Sectional Committee, 1896-1919, M8/4/32, 13 June, 1907.
- 134 GMCRO MCC Testing House Management Committee M8/4/28, 26 July, 1905. Strangely, the MCC decided not to pursue this libel case.
- 135 Ibid. 27 April, 1910.

- 
- 136 Ibid. 27 April, 1910; 1 June, 1910; 6 October, 1910.
- 137 Ibid, 6 October, 1910. This final complaint originated from the renowned merchants, Ellinger & Ellinger.
- 138 *MCC Monthly Record*, 1910 Vol XXI, p. 41, Letter dated 28 February 1910.
- 139 Ibid., p. 257, Letter by R. H. Patuck to MCC, 18 July 1910.
- 140 Ibid., p. 257, Reply to R H Patuck by MCC, 23 July 1910.
- 141 *MCC Monthly Record*, 1900 Vol XI, p. 67, Letter from Elijah Helm to Bombay Chamber of Commerce, 2 March 1900.
- 142 *MCC Monthly Record*, 1910 Vol XXI, p. 6, Annual Report of the Tribunal of Arbitration, 31 January 1910.
- 143 *MCC Monthly Record*, 1914 Vol XXV, pp. 9-10, Annual Report of the Tribunal of Arbitration, 31 January, 1914.
- 144 *The Times*, 27 June 1913, p. 32
- 145 GMCRO MCC, Minutes of the Yarn Section, M8/4/28, 12 July, 1912.
- 146 McDowell, 'Cotton fibres', 238-271
- 147 GMCRO MCC Minutes of the Yarn Section, 12 July, 1912; 7 October, 1912.
- 148 *Shirley Memoirs* Vol. 1 1922, p. 63, OLD 6/2/1. Sawbridge, *Story of Shirley*.
- 149 MCC Minutes of Sub-committee of Testing House M8/4/29, 23 July 1923.
- 150 *MCC Monthly Record*, 1907 Vol XVIII, p. 14, Annual Report of the Tribunal of Arbitration, 31 January 1917.
- 151 Quarry Bank Mill Archive, *Spinning Suppliers Book* (uncatalogued)
- 152 Scranton and Fridenson, *Reimagining Business History*, 160
- 153 Gibbon, 'Upgrading Primary Production', 351; Gereffi et al, 'Global value chains', 79-81; Ponte and Gibbon, 'Quality Standards', 6.
- 154 The literature on this subject of standards and how they are established is extensive. The following texts are only illustrative of the diverse ways in which standardisation has been examined: Murphy and Yates, *ISO*; Farrell and Saloner,



- 
- 'Coordination'; Weiss and Sirbu, 'Technological choice'; Austin and Milner, 'Strategies'; David, 'QWERTY'; Barzel, 'Measurement Cost', 30-31.
- 155 Rivalry to control quality standards is evident in other produce and manufacturing sectors as well; Velkar, 'Competition and Coordination'; Pirrong, 'Efficient Scope';
- 156 *Manchester Guardian*, 11 December 1903, 8.
- 157 Kindelberger, 'Standards', 380; Henson and Humphrey, 'Understanding Complexity', 1630; Brunsson and Jacobsson, 'Expansion of Standardisation', 3.
- 158 S.C. on Merchandise Marks, 1887: précis of evidence, 159 (12); QQ.2782-83.
- 159 Bernstein, 'Private Commercial Law'.
- 160 Johnson, *Making the Market*, 3.
- 161 Williamson, 'Transaction-Cost Economics'; Leunig, 'British industrial success'; Broadberry and Marrison, 'External Economies'.
- 162 Beckert recognizes the political power of the merchants, but does not acknowledge how they use to shape the rules of the market; Beckert 'Empire of Cotton'.
- 163 Pearson, 'Moral Hazard', 3
- 164 Granovetter, 'Economic Action'; Carnevali, 'Social Capital'
- 165 Redford, *Manchester Merchants*, 144
- 166 Langlois, 'Economic institutions'.

**Table 2. Manchester Testing House: Samples tested, 1899-1913**

Year	Fees Received (£)	Samples Tested (Nos.)			Yarn+Textiles (% of Total)
		Yarn	Textiles	Total samples	
1899	501.22	1525	1966	4257	82.0%
1900	739.82	642	1446	2781	75.1%
1901	1,002.85	1253	1714	3802	78.0%
1902	1,000.30	1084	1394	3388	73.1%
1903	1,167.27	1213	1549	3794	72.8%
1904	1,413.43	1601	3333	6001	82.2%
1905	2,935.78	1529	5236	7976	84.8%
1906	1,703.18	1377	2348	4657	80.0%
1907	1,661.20	1774	2729	5505	81.8%
1908	2,080.58	2210	3531	7059	81.3%
1909	2,426.45	3144	3848	7244	96.5%
1910	2,269.25	1948	3834	7229	80.0%
1911	2,236.55	2334	4435	8132	83.2%
1912	2,470.25	2621	4294	7614	90.8%
1913	4,320.68	2417	7353	11788	82.9%
1914	6,320.82	3215	9533	14824	86.0%

Note: Total samples refers to the sum of yarn, textiles, chemicals and produce.

Source: Calculated from GMRCO MCC, M8/4/28, Testing House Management Committee Reports, 1899-1919.

**Table 2. Yarn and cloth exports by volume, 1880-1913.**

	Average Annual Volume of exports		Yarn exports as % total textile exports
	Yarn	Piece Goods/Cloth	
1880-89	250.39	833.17	23.3
1890-99	239.02	923.04	20.6
1900-1909	189.26	1030.95	15.4
1910-1913	217.40	1216.45	15.2
1880-1913	225.18	962.86	19.2

*Notes:*

1. Volume denotes pound weight (millions).
2. Values in columns two, three, and four refer to annual averages.
3. Robson assumes an average weight of 5.5 yards per lb. for piece goods/cloth

*Source:* Robson, *Cotton Industry*, p331 Statistics (A), Table 1

**Table 3**      **Examples of cases investigated by the Testing House**

Date	Merchant <sup>1</sup>	Spinner	Yarn type <sup>2</sup>	Reported count	Actual count	Shortfall (%) <sup>3</sup>
1897	Messrs Hiltermann Bros;	n.a.	Dyed	40s	31.93s	34.1
	George Fraser, Son & Co.			40s	38.88s	32.5
1898	n.a	n.a. (Glasgow)	Dyed	n.a.	n.a.	32.1
				n.a	n.a.	49.2
1898	Messrs. S & C Nordlinger	John Orr Ewing	Dyed	n.a.	n.a.	33.6
				n.a.	n.a.	32.8
1902	George Fraser, Son & Co.	n.a. (Bombay)	Grey	40s	37.9s	2.3
			Grey	40s	39.7s	0.36
			Grey	40s	38.6s	3.5
			Grey	10s	9.9s	3.0

*Notes.* 1. Column two refers to the merchants who reported the fraud.

2. As discussed in the text, the ‘standard’ hank for grey yarns was 840 yards; the maximum permissible ‘shrinkage’ for dyed yarns was 2.5% of 840 yards, which equates to 819 yards.

3. Shortfall is expressed as the percentage difference between reported and actual length, in yards. In some cases the actual length of yarn (not count), is reported.

*Sources:* GMCRO, MCC, M8/4/32, *Minutes of the Yarn Section*, 5 July, 1897; GMCRO, MCC, M8/4/34, *Minutes of the Yarn Conference held at Carlisle*, 9 March, 1898 (letter dated 25 April, 1899); GMCRO, MCC, M8/4/32, *Minutes of the Yarn Section*, 4 April, 1898; 4 May, 1898; GMCRO, MCC, M8/4/28, *Testing House Management Committee, Joint Meeting of the Yarn and Testing House Sections*, 26 February, 1902.

"SUNRESISTA,"  
No. 15.

# SUNRESISTA

Please read the following.

## UNIQUE REPORT.

*Manchester Chamber of Commerce,  
Testing House and Laboratory,  
Royal Exchange,  
Manchester.*

*January 23, 1912.*

Gentlemen,

We have tested a number of patterns comprising 29 shades of cloth marked "Sunresista" S1 to S29, and in all cases we find the dye of the patterns to be fast when subjected to the action of

- a. Boiling Water.
- b. Boiling Soap Solution.
- c. Boiling Soda Solution.

Yours faithfully,  
(Signed) FRED. W. BARWICK,  
Manager.

*The following London Wholesale Houses can supply "SUNRESISTA" :—*

Messrs. SPENCER, TURNER & BOLDERO, Ltd., Lisson Grove, N.W.  
Messrs. BRADBURY, GREATORIX & CO., Ltd., Aldermanbury, E.C.  
Messrs. THE FORE STREET WAREHOUSE CO., Ltd., Fore St., E.C.

Any Wholesale or Retail Buyer of these Fabrics can examine above tests by arrangement with the BRITISH TEXTILE SYNDICATE, 92, Market Street, Manchester, from whom also may be obtained the names of Provincial Houses stocking "Sunresista."